Limited Reevaluation Report and Environmental Assessment
on
Consolidated Implementation
of the
New York and New Jersey Harbor Deepening Project

U.S. Army Corps of Engineers
New York District

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SYLLABUS

This Limited Reevaluation Report (LRR) and Environmental Assessment (EA) have been prepared to serve as a decision document for budgeting for and construction of the New York and New Jersey Harbor Deepening Project (HDP). Its purposes are:

- To summarize changes that have occurred since publication of the *Report of the Chief of Engineers dated 2 May 2000 on the New York and New Jersey Harbor Navigation Study* and its Recommended Plan that consisted of providing 50-foot channel access to each of the container-handling terminals in the Port of New York and New Jersey;

- To confirm that the Recommended Plan remains economically justified and environmentally acceptable;

- To supply the information necessary for the Secretary to make two decisions:
  - Whether or not to consolidate implementation of the previously authorized channel deepening projects (Predecessor Projects) with the Recommended Plan, and
  - Whether, and to what extent, the non-Federal sponsor can be credited for costs incurred for work performed in advance of execution of a PCA to implement the Recommended Plan.

This report was prepared by the New York District and coordinated with the Port Authority of New York and New Jersey, the Project's non-Federal sponsor, and will serve as the decision document for the Project Cooperation Agreement.

The LRR concludes that the HDP remains economically justified and environmentally acceptable. Further combining construction of portions of variously authorized projects could result in a cost savings of approximately $101 million. For this reason, the District recommends:

- Consolidation of the implementation of certain as yet uncompleted portions of the Predecessor Projects with the implementation of the Recommended Plan described in the *Report of the Chief of Engineers dated 2 May 2000 on the New York and New Jersey Harbor Navigation Study*.

- That the alignment of the Port Jersey 41-foot project be converted to that of the 50-foot channel in the Recommended Plan. The plans of the State of New Jersey call for early implementation of the 41 to 50 foot increment of the Port Jersey portion of the HDP via a Department of the Army permit;

- The use of larger contract areas to provide flexibility for the dredging industry with respect to environmental windows and equipment mobilization;

- Implementation of the Harbor Air Management Plan in order to bring the HDP into compliance with the Clean Air Act;

- Implementation of the aquatic mitigation plan, as described in the *Environmental Assessment*; and

- Approval by the Secretary of the Army of the crediting plan described herein. This plan provides credits to the non-Federal sponsor for in-kind construction and design services that it has performed prior to or after the 50-foot Project Cooperation Agreement is executed, and are integral to the overall project.

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GLOSSARY

AK.....Arthur Kill

AK-41/40 .....The Predecessor Project for Arthur Kill. AK-41/40 entailed deepening the Arthur Kill Channel to 40 and 41 feet. It was authorized for construction in §102 of WRDA '86.

ASA(CW) .....The Assistant Secretary of the Army (Civil Works)

Authorized Depth.....The excavated depth. In areas of rock or hard bottoms this depth is 2 feet deeper than maintained depth.

BCR.....Benefit to Cost Ratio

Berth.....The water area, at the waterfront edge of a wharf, reserved for a vessel. The term is sometimes used to refer to the dock or wharf structure.

CAA .....Clean Air Act

Chief's Report .....The *Report of the Chief of Engineers on the New York and New Jersey Harbor Navigation Study*, May 2, 2000. This report was based on the recommendations of the *Feasibility Study* and served as the basis for project authorization.

CO .....Carbon monoxide

The Corps.....The United States Army Corps of Engineers (USACE)

Containerized Cargo .....Cargo transported in boxes (containers) that are constructed with varying dimensions and to withstand transportation stresses.

DA.....Department of the Army

District.....The New York District of the Corps

Draft .....The depth of a vessel in the water.

EFH.....Essential Fish Habitat

EIS.....Environmental Impact Statement

EP.....Engineering Pamphlet

ER .....Engineering Regulation

Equimarginal Analysis.....A foot-by-foot of channel depth analysis of commodity flows, based on forecast fleet distributions, predicted vessel loading, terminal capacities, etc.

Excavated Depth .....This is the target, or minimum, depth of initial construction dredging. To provide added safety clearance, this depth is 2 ft deeper than maintained depth in areas of rock and hard bottom.

Feasibility Report.....*New York and New Jersey Harbor Navigation Study Feasibility Report*, December 1999.

FY .....Fiscal Year

Geologic Volume……...The volume of in-situ material to be dredged.

GCR .....General Conformity Rule

GNF.....General Navigation Features

HAMP .....Harbor Air Management Plan

HARS.....Historic Area Remediation Site

HDP.....Harbor Deepening Project

HNS.....*New York and New Jersey Harbor Navigation Study*

Harbor .....Short for "New York and New Jersey Harbor"; this refers to the waterways in the analysis. However, it may be used interchangeably with the Port.

KVK/NB-45.....The Predecessor Project for the Kill Van Kull. KVK/NB-45 entailed deepening the Kill Van Kull to 45 feet. It was authorized for construction in §101 of WRDA '86.

LERR .....Lands, easements, relocations, rights-of-way, disposal areas and water and mineral rights, which are necessary to implement the project .

LRR.....Limited Reevaluation Report

MLW.....Mean Low Water

MOTBY .....Military Ocean Terminal at Bayonne

Maintained Depth.....The depth of a channel maintained by operation and maintenance dredging.

NEAT.....Northeast Auto Terminal

NED .....National Economic Development

NO_x .....Oxides of Nitrogen

NYD.....New York District

OMB .....The Office of Management and Budget (Federal)

Overdredge Depth.....The maximum additional depth of a channel beyond excavated depth allowed by permit to account for dredging equipment inaccuracy. In order to assure that the excavated depth is achieved, contractors tend to dredge beyond the excavated depth. This additional depth is routinely permitted to vary up to an additional 2 feet from the excavated depth, depending on the type of dredged material and dredging method used. The contractor is not paid for this additional volume.

PANYNJ .....The Port Authority of New York and New Jersey, and, in this case, the non-Federal sponsor.

Pay Volume……...The volume of dredge material including the maximum permitted overdredge depth of 1.5 ft for all channels except Ambrose which has a paid overdepth of 2 ft.

PCA.....Project Cooperation Agreement

PJ-41 .....The Predecessor Project for Port Jersey Channel. PJ-41 entailed deepening the Port Jersey Channel to 41 feet. It was authorized for construction in §202(a) of WRDA '86.

Port.....Short for "The Port of New York and New Jersey", this refers to the land-side facilities, operations, etc. in the analysis. However, it may be used interchangeably with the Harbor.

Post-Panamax Vessel.....Refers to a vessel too large to navigate the Panama Canal. The beam width is greater than 113 ft (34.5 m).

Predecessor Projects.....Channel deepening projects already underway in New York Harbor when the Recommended Plan was authorized. Specifically, these projects are Arthur Kill, Howland Hook Marine Terminal, New York and New Jersey; the Kill Van Kull and Newark Bay Channel, New York and New Jersey; and the New York and Adjacent Channels, Port Jersey Channel, New Jersey. They are designated AK-41/40, KVK/NB-45, and PJ-41, respectively.

RAT.....Regional Air Team

Recommended Plan .....The plan of improvements recommended in the *Chief's Report* dated May 2, 2000.

Secretary .....The Assistant Secretary of the Army (Civil Works)

SIP.....State Implementation Plan

SOC.....Statement of Conformity (cSOC is a conditional SOC)

TEU.....Twenty-foot Equivalent Unit

USACE .....The United States Army Corps of Engineers (also referred to as the Corps)

WRDA .....Water Resources Development Act

VOCs.....Volatile Organic Compounds

I PURPOSE OF THIS LIMITED REEVALUATION REPORT

1. This Limited Reevaluation Report (LRR) serves as a decision document for budgeting for and construction of the New York and New Jersey Harbor Deepening Project. It presents relevant changes in the existing condition that have occurred since the *New York and New Jersey Harbor Navigation Study Feasibility Report*[1] (*Feasibility Report*) was completed in 1999. It demonstrates that the plan recommended in the *Feasibility Report* and in the *Report of the Chief of Engineers on the New York and New Jersey Harbor Navigation Study*[2] (*Chief's Report*) is economically justified, environmentally acceptable, and in accordance with policy. It also serves as the basis for a Project Cooperation Agreement (PCA) between the Government and the non-Federal Sponsor (in this case, the Port Authority of New York and New Jersey (PANYNJ)), to implement deepening projects in the Port of New York and New Jersey (the Port), and includes a recommendation as to the crediting of work performed by the non-Federal sponsor in advance of the PCA.

2. The plan of the report is as follows:

- First, it summarizes changes that have occurred since publication of the Report of the Chief of Engineers on the New York and New Jersey Harbor Navigation Study (*Chief's Report),* and the effects of these changes on the Recommended Plan.[3]

- Second, it confirms that the Recommended Plan remains economically justified and environmentally acceptable.

- Third, it supplies the information necessary for the Secretary to make two decisions:
  - Whether or not to consolidate implementation of the previously authorized channel deepening projects (Predecessor Projects) with the Recommended Plan,[4] and
  - Whether, and to what extent, the non-Federal sponsor can be credited for costs incurred for work performed in advance of execution of a PCA to implement the Recommended Plan.

[1] *New York and New Jersey Harbor Navigation Study Feasibility Report*, December 1999.
[2] *Report of the Chief of Engineers on the New York and New Jersey Harbor Navigation Study*, May 2, 2000.
[3] The Recommended Plan consists of providing 50-foot channel access to each of the container-handling terminals in the Port and is detailed on page 3 of this report.
[4] For brevity and clarity, this single project is termed the Harbor Deepening Project (HDP) in the remainder of this document.

II PROJECT BACKGROUND

3. This study was authorized by §435 of the Water Resources Development Act of 1996, which reads:

> *The Secretary shall conduct a comprehensive study of navigation needs at the Port of New York-New Jersey (including the South Brooklyn Marine and Red Hook Container Terminals, Staten Island, and adjacent areas) to address improvements, including deepening of existing channels to depths of 50 feet or greater, that are required to provide economically efficient and environmentally sound navigation to meet current and future requirements.*

4. The U.S. Army Corps of Engineers (USACE or the Corps), New York District (the District) was assigned to carry out this task, which became known informally as the Harbor Navigation Study,[5] or simply HNS.

5. The water resources problem studied in the HNS was how best to provide safe and efficient access to the various marine terminals within the Port of New York and New Jersey for deeper-draft vessels already entering the world's commercial fleet or whose introduction to the fleet was reasonably foreseeable. On December 30, 1999, the District submitted its findings and recommendations in the form of the *New York and New Jersey Harbor Navigation Study Feasibility Report* (the *Feasibility Report*). The *Feasibility Report* recommended deepening all channels providing access to container-handling terminals in the Port to at least 50 feet (with one exception).[6] A detailed description of this plan (the Recommended Plan) can be found on page 83 of the *Feasibility Report* and page 3 of this document.

6. When the HNS began, the District was already preparing a series of LRRs for channel deepening projects authorized for construction in Water Resources Development Act (WRDA) of 1986. Specifically, these projects were:

- Deepening the Kill Van Kull and Newark Bay Channels to 45 feet[7] (KVK/NB-45);
- Deepening the Arthur Kill Channel to 41 and 40 feet[8] (AK-41/40); and
- Deepening Port Jersey Channel to 41 feet[9] (PJ-41).

[5] Formally, it was known as the "New York and New Jersey Harbor Navigation Study, New York and New Jersey."
[6] The exception was Red Hook Terminal, which, in the without-project condition, was slated to be closed and its container-handling operations moved to South Brooklyn Terminal. As of this writing, this is still the plan of the owners of the property on which Red Hook Terminal is situated.
[7] See §101 of WRDA '86.
[8] See §102 of WRDA '86.
[9] See §202(a) of WRDA '86.

7. These three projects are referred to collectively as the Predecessor Projects. Because the District believed that all of these projects would be authorized for construction and that Project Cooperation Agreements (PCAs) would be signed with respect to each of them,[10] their completion was assumed to be the most likely without-project future condition for the HNS.

THE *FEASIBILITY REPORT* AND ITS RECOMMENDED PLAN

8. The *Feasibility Report*[11] identified the water resources problem as unsafe and inefficient access to the Port's container-handling facilities as a result of depth limitation in the Harbor. This problem will become more acute as larger container ships enter the world's commercial fleet.

9. The Recommended Plan in the *Feasibility Report* was identified as the National Economic Development (NED) Plan. It consisted of the following channel deepening, environmental compliance, and project implementation components:

- Construction of a 53 ft Mean Low Water (MLW) navigation channel to deepen the entire length of the existing Ambrose Channel;
- Construction of a 50 ft MLW (52 ft in rock or otherwise hard material) navigation channel to deepen portions of the existing Anchorage Channel, from the Narrows to 1000 feet past its juncture with the Port Jersey Channel;
- Construction of a 50 ft MLW (52 ft in rock or otherwise hard material) navigation channel to deepen the existing Port Jersey Channel, from its juncture with Anchorage Channel to the Global Terminal and Military Ocean Terminal-Bayonne (MOTBY) facilities;[12]
- Construction of a 50 ft MLW (52 ft in rock or otherwise hard material) navigation channel to deepen the existing Kill Van Kull, from its juncture with Anchorage Channel to the Arthur Kill;
- Construction of a 50 foot MLW (52 ft in rock or otherwise hard material) navigation channel to deepen the existing Newark Bay Channel, from its juncture with the Kill Van Kull to the juncture with the Elizabeth Channel, and including deepening the existing Elizabeth, South Elizabeth, and Elizabeth Pierhead Channels to 50 ft MLW (52 ft in rock or otherwise hard material);
- Construction of a 50 ft MLW (52 ft in rock or otherwise hard material) navigation channel to deepen the existing Arthur Kill, from its juncture with

[10] This did, in the event, prove to be the case.
[11] The *Feasibility Report* was the basis of the *Chief's Report*.
[12] This recommendation is subject to a condition precedent imposed by the Office of Management and Budget (OMB) directing that construction of the Federal component of the Port Jersey Channel be predicated upon there being operational container-handling facilities of sufficient capacity to realize sufficient benefits to justify the deepening of the Port Jersey Channel to 50 ft as formulated within the Recommend Plan. The letter is included with this LRR as pertinent correspondence.

the Kill Van Kull and Newark Bay to the southernmost berth at the Howland Hook marine terminal; and

- Construction of a 50 ft MLW (52 ft in rock or otherwise hard material) navigation channel to deepen the existing Bay Ridge Channel, from its juncture with Anchorage Channel to the South Brooklyn Marine Terminal, subject to commitment to rehabilitate the South Brooklyn Marine Terminal and transportation infrastructure needed to realize project benefits.
- Implementation of mitigation measures for unavoidable impacts, to include the restoration of 11 acres of intertidal wetlands, and construction of 7.6 acres of littoral habitat.

10. It was further recommended that the District be granted the authority to utilize innovative measures in its design, management, and execution, including alteration of the types of contracts entered into and the administration of those contracts, as necessary in order to expedite the construction of the project, and thereby maximize the value of the Federal investment. Measures that could be taken included, but were not limited to, the use of a single, consolidated PCA to cover construction of the Recommended Plan, delegation of authority to execute all required agreements, and allowing the drilling and blasting of rock for construction of the Recommended Plan to be done in conjunction with currently on-going projects. To address shortage of equipment for construction, measures such as construction and use of government-owned, contractor-operated equipment and the possibility of providing incentives for the early completion of the construction contracts could also be explored.

11. The Recommended Plan from the *Feasibility Report* formed the basis of the *Report of the Chief of Engineers,*[13] and Congress authorized the "Port of New York and New Jersey, New York and New Jersey" Harbor Navigation Project (the HNP was the original project based on the Recommended Plan) in §101(a)(2) of the WRDA of 2000.[14] The text of the authorization is provided:

> *(2) PORT OF NEW YORK AND NEW JERSEY, NEW YORK AND NEW JERSEY-*
>
> *(A) IN GENERAL- The project for navigation, Port of New York and New Jersey, New York and New Jersey: Report of the Chief of Engineers dated May 2, 2000, at a total cost of $1,781,234,000, with an estimated Federal cost of $743,954,000 and an estimated non-Federal cost of $1,037,280,000.*
>
> *(B) NON-FEDERAL SHARE-*
>
> *(i) IN GENERAL- The non-Federal share of the costs of the project may be provided in cash or in the form of in-kind services or materials.*
>
> *(ii) CREDIT- The Secretary shall credit toward the non-Federal share of the cost of the project the cost of design and*

[13] *Report of the Chief of Engineers on the New York and New Jersey Harbor Navigation Study,* May 2000
[14] P.L. 106–541, 11 December 2000.

> *construction work carried out by the non-Federal interest before the date of execution of a cooperation agreement for the project if the Secretary determines that the work is integral to the project.*

12. In January 2001, the District entered the Preconstruction Engineering and Design phase of the HNP as recommended in the *Chief's Report*. Work on that plan had already begun when the Conferees directed the Secretary to examine the possibility of consolidation of the Predecessor Projects with the Recommended Plan.

13. This direction took the form of *The Conference Report for the Fiscal Year (FY) 2002 Appropriations Act*[15] which combined the appropriations of previously authorized New York and New Jersey Harbor deep-draft navigation projects[16] with the execution of the Recommended Plan. The Conference Report states, in pertinent part:

> *The conferees are aware of the urgent need to facilitate efficient construction of improvements for New York and New Jersey Harbor to meet the needs of navigation interests and save significant Federal and non-Federal resources. Therefore, the conferees direct the Secretary of the Army to combine the previously authorized Arthur Kill, Howland Hook Marine Terminal, New York and New Jersey, project; the Kill Van Kull and Newark Bay Channel, New York and New Jersey, project; the New York and Adjacent Channels, Port Jersey, New Jersey, project into a single project designated the New York and New Jersey Harbor, New York and New Jersey, project. The conferees have combined the Construction, General and General Investigations budget amounts for these projects and provided $88,500,000 for the New York and New Jersey Harbor project. The Secretary of the Army is directed to use these funds to continue construction of the combined New York and New Jersey Harbor project to the depths authorized in the Water Resources Development Act of 2000.*

14. In response to this direction, the District began an effort to determine the nature and extent of the opportunities to effect project cost savings by consolidating implementation of the Predecessor Projects with implementation of the Recommended Plan into a single effort. The source of such savings would be, primarily, the avoidance of repeated mobilization and de-mobilization efforts in the same area, reduced repetition of drilling and blasting in the same area, and the possibility of achieving higher production rates in areas in which the increment of deepening is larger because of

[15] U.S. Congress, House. *Conference Report on the Energy and Water Appropriations Act of 2002*, 107th Cong., 1st Ses., 2002. H.Rpt. 107-258.

[16] Specifically, the Arthur Kill Channel, Howland Hook Marine Terminal, New York and New Jersey; the Kill Van Kull and Newark Bay Channel, New York and New Jersey; and the New York and Adjacent Channels, Port Jersey Channel, New Jersey. They are designated AK-41/40, KVK/NB-45, and PJ-41, respectively.

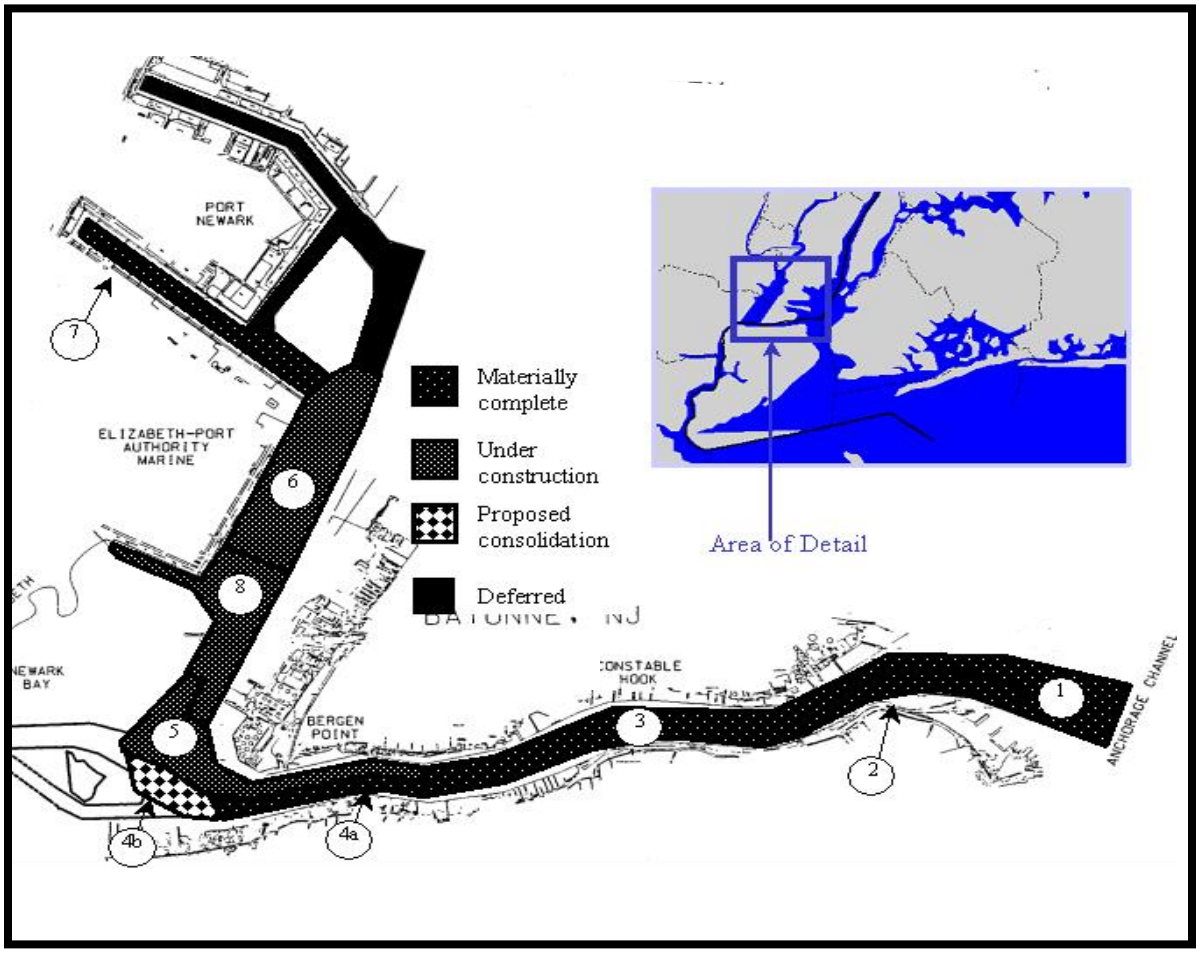
consolidated implementation.[17] However, there are also aspects of some consolidated implementation options that have the potential to cause project cost increases. The purpose of this document is to provide the information necessary to determine whether, in which channel reaches, and to what extent, consolidated implementation would realize project cost savings, be environmentally acceptable, be in accordance with policy, and be supported by the non-Federal sponsor.

STATUS OF PREDECESSOR PROJECTS

15. As of January 2004, the implementation status of the Predecessor Projects is as follows:

[17] The parts of the Kill Van Kull Channel in which the channel bottom is rock provide a good illustration of the underlying concept. Without consolidated implementation, drill boats would have to be deployed and set-up to perform blasting for the 40 to 45 ft increment, then dredges, many of which can take more than a five foot vertical "bite", would have to be deployed and that increment would have to be excavated, then the drill boats would have to be re-deployed and re-setup for the 45 to 50 ft increment, etc. With consolidated implementation, there would be only one deployment and setup of the drill boats for the 40 to 50 ft increment and dredges that can take more than a five foot vertical bite would, presumably, be able to complete the ten foot deepening in fewer bites than it would have taken to complete two five foot increments. Hence, the dredges could well achieve a higher production rate with consolidated implementation. For a more detailed explanation of the sources of cost saving potentially offered with consolidated implementation, see the *Cost Appendix*.

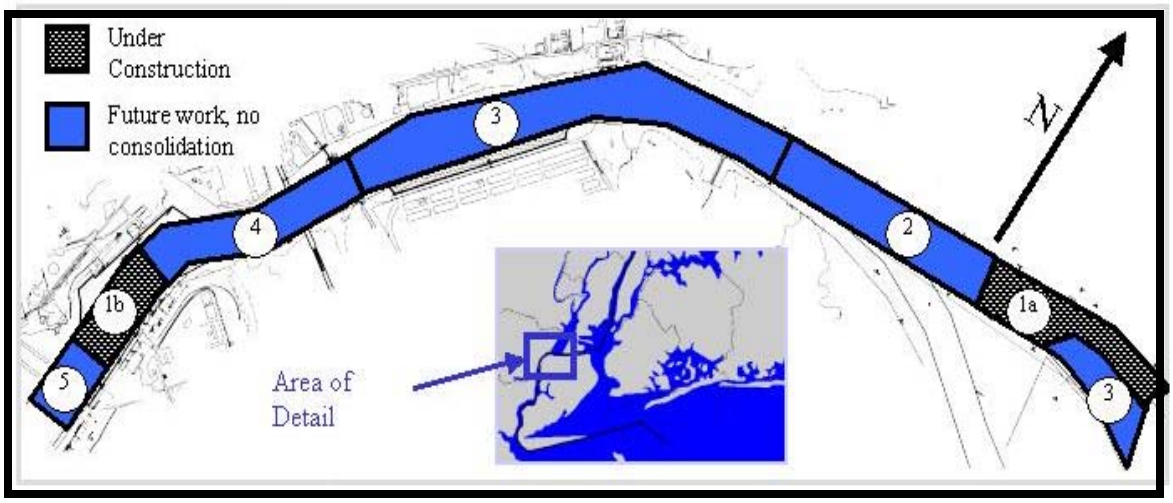
Figure 1 – Status of Predecessor Project, Kill Van Kull



Kill Van Kull and Newark Bay Channel to 45 feet (KVK/NB-45)

16. The Project Cooperation Agreement (PCA) was signed in January 1999 and the first construction contract awarded in March 1999. The District has awarded eight contracts to date on the project and five are completed. One contract, Area 4b, remains to be advertised and awarded. The PANYNJ was willing to consider consolidated implementation of Area 5 in advance of the PCA with respect to the Recommended Plan and will consider consolidated implementation of Area 4b unless, for some reason, there is a substantial delay in executing the PCA with respect to the Recommended Plan.

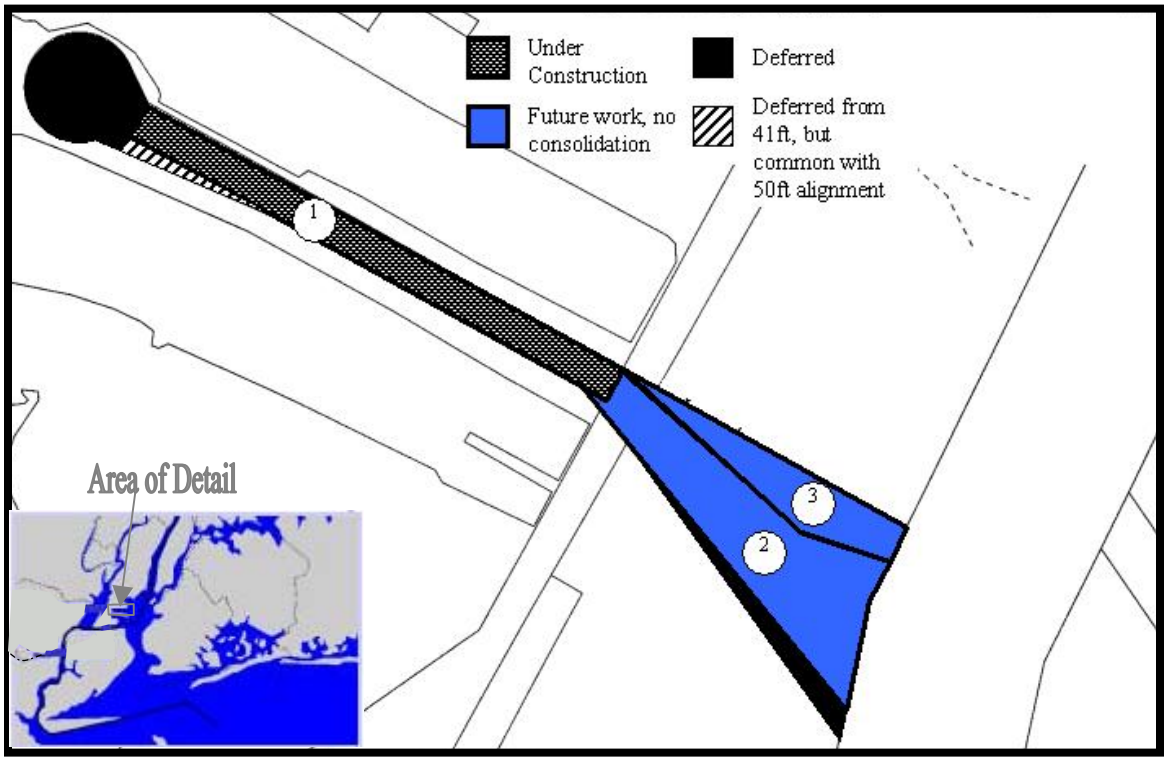
Figure 2 - Status of Predecessor Project, Arthur Kill



Arthur Kill Channel to 41 and 40 feet (AK-41/40)

17. The PCA was signed in July 2002 and the first construction contract awarded in May 2003. The project consists of five contracts, with four remaining to be advertised and awarded. The second construction contract is scheduled to be executed in the spring of 2004. Consolidated implementation was considered for Contract Area 3 but was determined to be disadvantageous as it would delay the realization of benefits of the Predecessor Project by 67 months.

Figure 3 - Status of Predecessor Project, Port Jersey



Port Jersey Channel to 41 feet (PJ-41)

18. The PCA for PJ-41 was signed in July 2002. The Predecessor Project was subdivided into three contract areas. The first two contract areas, which are common to both the PJ-41 and the Recommended Plan are or soon expected to be in construction to 41 feet. The third contract area consists of a turning basin and small portions of the western end of the channel that would provide ingress and egress to the turning basin. Before the publication of the *Feasibility Report*, a USACE value engineering study recommended that the deepening of this contract area be deferred and that the "straight channel" design be implemented because it allowed for improved navigational use. This "straight channel" design was subsequently included within the Recommended Plan.

19. The original Port Jersey Channel deepening project was authorized subject to a favorable report in §202(b) of WRDA '86. The subsequent *New York Harbor and Adjacent Channels – Port Jersey Channel Feasibility Report* in 1987 recommended that Port Jersey Channel be deepened to 41 feet. In 1998, the District completed an LRR, the principal finding of which was that the 41-foot project remains economically justified. That LRR became the basis for construction authorization of the PJ-41 project in §337 of WRDA '99.

20. In December of 1999, the District completed the *New York and New Jersey Harbor Navigation Study Feasibility Report*. Among other things, it recommended that Port Jersey Channel (under a slightly different alignment) be deepened to 50 feet. The

New York and New Jersey Harbor Navigation Study assumed the prior completion of the PJ-41 project as part of its without project future condition. As of this writing, the PJ-41 project has begun construction but has not been completed.

21. During the twelve years that elapsed between the *New York Harbor and Adjacent Channels – Port Jersey Channel Feasibility Report* of 1987 and the *New York and New Jersey Harbor Navigation Study Feasibility Report* of 1999, there was an increase in the average length and draft of containerships calling at Port Jersey Channel. This fact adversely affects the utility and navigational safety of the channel alignment recommended in 1987 (*i.e.*, PJ-41).

22. The utility of the turning basin at the western end of the channel in the PJ-41 alignment recommended in 1987 was diminished by the fact that its maximum diameter (it cannot be expanded further) was insufficient to accommodate most of the cargo vessels calling at Port Jersey Channel by 1999. Moreover, the greater length of the vessels typically calling by 1999 made modification of the 1987 channel alignment in the interest of the safety of turning vessels desirable. Consequently, the Recommended Plan of the *New York and New Jersey Harbor Navigation Study Feasibility Report* did not recommend that the turning basin at the western end of the channel be deepened. It did recommend that a larger turning area be placed in Anchorage Channel at the eastern end of the Port Jersey Channel, and that the channel alignment be changed to accommodate the newer vessels in a safer and more efficient manner. Under the Recommended Plan, the reduced cost from the decrease in the quantity of material to be dredged at the western end of Port Jersey Channel is almost exactly counterbalanced by the increase in cost from the additional quantity of material to be dredged at the eastern end of Port Jersey Channel to complete the realigned 41-foot project. In that this change also reduces the overall volume of material to be dredged to construct the 50-foot channel, the costs for constructing the 50-foot project are reduced.

23. The Recommended Plan was authorized for construction in §101(a)(2) of WRDA ’00. The desirability of the recommended changes in the alignment of Port Jersey Channel was confirmed in the Value Engineering (VE) Study of the PJ-41 project conducted in 2000. This will be implemented as a post-authorization change in the Port Jersey 41-foot project.

24. Paragraph 9-3.a of Engineering Pamphlet (EP) 1165-2-1 reads, in pertinent part:

> a. Modification Authority Delegated to the Chief of Engineers. Modifications and changes of a project necessary for engineering or construction reasons to produce…the extent of navigation improvement…intended by the Congress are within the latitude delegated to the Chief of Engineers. Examples of such changes are…changes in channel alignment and dimensions indicated by more detailed studies… The Chief of Engineers recognizes that this latitude for changes and modifications of authorized projects is an important delegation of authority which must be exercised carefully. Changes involving the addition of project purposes, significant changes in project cost, scale, features, benefit, location, and costs

allocated to reimbursable project purposes require notification of OMB.

b. Modifications Beyond Delegated Authority. A proposed modification of an authorized project is brought to the attention of Congress if study after authorization shows that: the scope of functions of the project will be changed materially; the plan of improvement will be materially changed from that originally authorized by Congress; special circumstances exist which were not known to the Corps or recognized by Congress when the project was authorized; or, for projects authorized or amended in WRDA 1986 (or in any law enacted after WRDA 1986 or amendment thereto), the updated estimate of total project costs exceeds the limitation on increases set in that Act. Decisions regarding project modifications are made on an individual case basis. Questionable cases are reported to HQUSACE in a PAC report (if not as one subject in a routine preconstruction planning document of broader project coverage) with the views and recommendations of the division and district commander. Recommendations for modifications beyond the authority delegated to the Chief of Engineers are submitted to the ASA(CW) with supporting documentation suitable to the case, for review and subsequent transmittal to Congress for authorization.

25. In order to be within the authority delegated to the Chief of Engineers, a navigation project modification must:

1. Be necessary for engineering or construction reasons, and
2. Produce the extent of navigation improvement intended by the Congress.

The engineering reason for adopting the alignment of Port Jersey Channel proposed in the Recommended Plan and in the VE study is that it is better adapted to safe and efficient accommodation of the majority of cargo vessels that are now using Port Jersey Channel and will do so in the future. The resulting channel will provide access to all of the marine terminals on Port Jersey Channel via a channel that is 41 feet deep, which will produce the same extent of navigation improvement intended by the Congress when it passed §337 of WRDA '99.[18] This is so whether the channel is eventually deepened to 50 feet or not.

26. Moreover, this modification does not involve the addition of project purposes, significant changes in project cost, scale, scope, features, benefits, location, or costs allocated to reimbursable project purposes. Therefore, it is included within the

[18] It is arguable that in passing §101(a)(2) of WRDA '00, Congress implicitly authorized constructing the PJ-41 project on the alignment of the Port Jersey Channel portion of the 50-foot (*i.e.*, Recommended Plan) project. To suggest otherwise is to suggest that Congress authorized useless construction, because having those parts of the PJ-41 project that lie outside the alignment of the 50 foot project deepened will provide no utility whatsoever after the 50 foot project is completed. Further, the *Conference Report for the Fiscal Year (FY) 2002 Appropriations Act* specifically stated that "*The conferees are aware of the urgent need to facilitate efficient construction of improvements for New York and New Jersey Harbor to meet the needs of navigation interests and save significant Federal and non-Federal Resources*." (emphasis added)

modification authority delegated to the Chief of Engineers, as described by ER 1105-2-100[19] and EP 1165-2-1, para. 9-3.a.

27. EP 1165-2-1, para. 9-3.b describes factors that would exclude this modification from the modification authority delegated to the Chief of Engineers. Those factors are:

1. The scope of functions of the project will be changed materially;

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[19] ER 1105-2-100 b and c read:

G-13. Approval Authorities**....**

b. Approval Authority Reserved by the Commander USACE. Any change to an authorized, uncompleted project that does not meet all of the criteria listed in paragraph G-13a and which does not require authorization by Congress pursuant to one or more of the criteria in paragraph G-13c shall be approved by the Director of Civil Works, HQUSACE, or specifically delegated by the Director to the Division Commander for approval.

c. Changes Requiring Authorization by Congress. The Chief of Engineers' discretionary authority to approve changes to authorized projects must not be abused. Changes in scope, including reduction in scope, beyond those listed in paragraph G-13a. should serve as an alert that the change may exceed the Chief of Engineers' discretionary authority. After review, the Commander USACE, in consultation with the ASA(CW), will determine whether the change can be made under discretionary authority or whether additional Congressional authorization is required. In addition, the following always require authorization by Congress:

(1) Addition or deletion of a project purpose, unless permitted under existing general authorities as discussed in paragraph G-14.

(2) For projects more than ten percent complete as of 17 November, l986, addition of fish and wildlife mitigation measures requiring acquisition of lands by condemnation.
Acquisition of water interests by condemnation.

(3) Change in the local cooperation requirements specifically referenced in the authorizing language, unless required by:

(a) Subsequent legislation; or,

(b) Addition of a project purpose within the general authority of the Chief of Engineers.

(4) Exceedence of the $10 million Federal cost, exclusive of price level changes, if the project was authorized under Section 201, prior to 22 October 1976; or $15 million Federal cost if authorized under Section 201, as amended by Section 131, of the WRDA of 1976, on or after 22 October 1976.

(5) Deepening of navigation channels.

(6) For projects authorized by WRDA '86 and subsequent authorizations, an increase in total project cost, exclusive of price level changes, of more than twenty percent of the total project cost stated in the authorizing legislation.

2. The plan of improvement will be materially changed from that originally authorized by Congress;
3. Special circumstances exist which were not known to the Corps or recognized by Congress when the project was authorized; or
4. For projects authorized or amended in WRDA 1986 (or in any law enacted after WRDA 1986 or amendment thereto), the updated estimate of total project costs exceeds the limitation on increases set in that Act. Because none of these factors is present in this case, there is no apparent reason why this modification should be excluded from the modification authority delegated to the Chief of Engineers.

28. Moreover, as compared to the authorized project, the modification does not involve addition or deletion of a project purpose, addition of fish and wildlife mitigation measures requiring acquisition of lands by condemnation or acquisition of water interests by condemnation, change in the local cooperation requirements specifically referenced in the authorizing language, deepening of navigation channels, or an increase in total project cost of more than twenty percent of the total project cost stated in the authorizing legislation. Therefore, the modification does not represent a changes requiring authorization by Congress as set forth in ER 1105-2-100, para. G-13.c.

29. For these reasons, the approval of the proposed changes in the alignment of the PJ-41 project is within the project modification authority delegated to the Chief of Engineers.

THE HARBOR DEEPENING PROJECT

30. In response to the Conference Report direction, the District has performed a limited reevaluation of the HNP's Recommended Plan and evaluated opportunities to consolidate implementation of the Recommended Plan with the continued implementation of Predecessor Projects. This single combined project is termed the Harbor Deepening Project (HDP) throughout this document. This LRR is the decision document that provides the District's assessment of consolidation opportunities and recommendations for HDP implementation.

III CHANGES SINCE THE *CHIEF'S REPORT*

31. Since the publication of the *Chief's Report*, there have been refinements to design and changes in the existing condition. These changes need to be summarized because they form the basis for the current cost estimate[20] and environmental compliance measures:

- **Refined Channel Design –**
  Since the publication of the *Chief's Report*, the Corps has performed ship simulation modeling studies of critical portions of the Project. These studies indicate some minor channel realignments are required at the Arthur Kill, the South Elizabeth portion of Newark Bay, and the Port Jersey Channels. These changes are detailed in the *Channel Design Appendix*.

- **Partial Implementation of Predecessor Projects –**
  The *Feasibility Report* assumed that Predecessor Projects - KVK/NB-45, AK-41/40, and PJ-41 - would be completed before the implementation of the Recommended Plan. At the time of this report, all three projects are under construction, and significant portions of KVK/NB-45 have been completed. Information from the post-dredging surveys of the completed parts of the Predecessor Projects has been incorporated into new estimates of the total quantity of material to be dredged to implement the Recommended Plan and to refinement of the HDP consolidation schedule. The new cost estimate also incorporates current information on the price of excavation and placement.

- **Updated Surveys** –
  In connection with the preparation of this LRR, the entire project was resurveyed. These surveys were then used to update the quantities of material to be dredged and provide more accurate characterization of the material to be dredged. The reader is referred to the *Cost Appendix* for further information.

- **Environmental Considerations** –
  The *Feasibility Report* acknowledged that the project must conform to the Clean Air Act (CAA) and that measures would be required to achieve compliance. The plan for CAA compliance is provided as an appendix to this document. Project costs of the CAA Compliance Plan have been incorporated into the project cost estimate. This report's *Environmental Assessment* provides details regarding Magnuson-Stevens Fishery Conservation and Management Act compliance, Habitat Mitigation, and Dredged Material Management.

[20] These changes are briefly summarized here, and described in depth in the *Cost Appendix* and *the Channel Design Appendix.*

- **Consolidation of Predecessor Projects with the Recommended Plan -** In response to the Conference Report direction, the Corps considered the merits of combining Predecessor Projects with the Recommended Plan (vertical consolidation). In addition, the Project Delivery Team evaluated the practicality of utilizing larger contracts than those envisioned in the Feasibility Report. Details of these assessments are provided in Section VI, Opportunities for Consolidated Implementation, below.

32. Taking account of these changes, in turn, leads to refinement of the construction schedule, and provides information vital to the formulation of the Clean Air Act (CAA) compliance plan and the current cost estimate for the Project. The updated project cost estimate is combined with an updated project benefits estimate in Section IV, Update of Project Economic Analysis, below.

IV UPDATE OF PROJECT ECONOMIC ANALYSIS

33. In accord with ER 1105-2-100, para. D-4.b(1)(d), an update of the economic analysis of the Recommended Plan has been undertaken. Details of the method used and results of the update are described in the *Economics Appendix* (Appendix - C). In Table 1, below, the results of the updated economic analysis are summarized and compared to the economic analysis summarized in the *Chief's Report*. Those results indicate that the Recommended Plan remains economically justified, with estimated annual NED benefits of $270,929,000 (the total NED benefits estimate is $4,504,341,000) and estimated annual NED costs of $109,404,000 (the total NED costs estimate is $1,818,897,000), resulting in annual net benefits of $161,525,000 (the total NED net benefits estimate is $2,685,444,000) and a BCR of approximately 2.5.

Table 1: Tabulation of Current Costs and Benefits

	Latest Approved[1]	Current Estimates[2]	Difference	Reason for Difference
Benefit Category				
Transportation Cost Reduction	$238,500,000	$270,929,000	$32,429,000	adjustment for change in discount rate, vessel operating costs, commodity forecast, *et al.*
Cost Category				
Construction of GNF	$113,021,000	$77,219,000	($35,802,000)	reduction of quantities reflecting actual results of predecessor project dredging and consolidation
LERR	$1,495,000	$1,853,000	$358,000	refined cost of Real Estate for mitigation
Local Service Facilities	$6,625,000	$2,444,000	($4,181,000)	Sponsor review revealed that the latest approved cost was total, and not incremental.
Federal Aids to Navigation	$9,666	$8,421	($1,245)	
Owner Cost for Utility Relocations	$1,378,000	$1,318,000	($60,000)	additional utility crossing identified
Owner Cost for Facility Removals	$473,000	$434,000	($39,000)	Revised channel alignment and more detailed structural has significantly changed this line item. Please see the report for details.
Incremental O&M	$73,000	$26,000	($47,000)	improved estimating of O&M cycle period and adjustment for change in discount rate
Interest During Construction	$32,841,000	$17,623,000	($15,218,000)	reduction in above line items and adjustment for change in discount rate
Net Benefits	$86,316,000	$161,525,000	$75,209,000	
Benefit / Cost Ratio	1.6	2.5	0.9	

1. *Report of the Chief of Engineers on the New York and New Jersey Harbor Navigation Study*, 2 May 2000. The figures reported reflect a discount rate of $6^{5}/_{8}$% and are in terms of the price level of October 1999.
2. The figures reported reflect a discount rate of $5^{5}/_{8}$% and are in terms of the price level of FY 2004.

34. The current estimate of total project benefits is 30% higher than the estimate described in the *Chief's Report*.[21] The current estimate of total project costs is 18% lower than the estimate described in the *Chief's Report*. Consequently, the overall Recommended Plan remains economically justified.

35. The fact that the overall Recommended Plan remains economically justified does not, by itself, mean that each of its elements remains incrementally economically justified. The conclusion of this update of the economic analysis of the Recommended Plan is that:

a. The Recommended Plan remains economically justified on the basis of the *Chief's Report* assumptions.
b. On the basis of the current estimates of project benefits and costs, the Recommended Plan is also economically justified with Pathway 1 as its first added element. To put this conclusion in other words, on the basis of the current estimates, each of the elements of the Recommended Plan remains incrementally economically justified, but in an order that is different from the order in which they were incrementally justified in the economic analysis summarized in the *Chief's Report*.

36. In the economic analysis summarized in the *Chief's Report*, the Recommended Plan was formulated as follows:

- Pathway 4 (Port Jersey Channel to the sea) was the only pathway that was independently economically justified. Consequently, it became the first added element.
- Construction of Pathway 4 would involve the deepening of Ambrose Channel and Anchorage Channel. Pathways 1 and 5 (KVK/NB and South Brooklyn, respectively) were incrementally economically justified as second and third added elements because part of their implementation costs as independent pathways to the sea (*i.e.*, Ambrose Channel and Anchorage Channel) would be absorbed by Pathway 4.
- Pathway 2 (Arthur Kill to Howland Hook) was economically justified as an element added to Pathway 1.

37. This formulation assumed that the planned conversion of the former MOTBY to a 130-acre container-handling facility and the planned conversion of the Northeast Auto Terminal (NEAT) to an 80-acre container-handling facility, both of which are on Port Jersey Channel (*i.e.* Pathway 4), would take place as scheduled. Although the City of Bayonne has issued a request for proposals with respect to the MOTBY conversion, to date, neither conversion has taken place.[22] This update of the economic analysis of the

[21] The percentage changes described in this paragraph were calculated on the basis of totals, not annualized totals.

[22] As of this writing, the plans of the Bayonne Local Redevelopment Authority call for:

Recommended Plan has, therefore, assumed that those conversions will not take place prior to execution of a PCA with respect to the HDP. The effect of this assumption is to reduce the proportion of project benefits whose realization can be attributed to the provision of 50-foot channel access at Port Jersey Channel.

38. Increases in the container-handling capacity of Global Marine Terminal, the only terminal on Port Jersey Channel that is currently engaged in container-handling operations, have partially, but not fully counterbalanced the fact that the MOTBY and NEAT conversions have not yet taken place. As a result of this reduction in the proportion of total project benefits attributable to Port Jersey Channel, the current estimate of the Benefit to Cost Ratio (BCR) of Pathway 4 has been reduced to 1.7. Pathway 4, therefore, remains economically justified as a first added element (*i.e.*, as an independent pathway to the sea).

39. The increase in the current estimate of total project benefits and the decrease in the current estimate of total project costs for those channels that make up Pathway 1 have had the effect of increasing the net benefits of Pathway 1 so as to render it also economically justified as a first added element, with a BCR of 1.9.

40. In the formulation presented in the *Chief's Report*, only Pathway 4 was economically justified as an independent pathway from container terminal to the sea, but the current economic analysis indicates that both Pathway 4 and Pathway 1 are economically justified as an independent pathway from container terminal to the sea in the most likely with-project future condition.

41. Because Pathway 1 is carrying the costs of Ambrose Channel and those parts of the Kill Van Kull and Anchorage Channels that Pathways 1 and 2 have in common, Pathway 2 is incrementally economically justified as an element added to Pathway 1 (incremental BCR = 5.7).

42. By the same reasoning, Pathway 5 is incrementally economically justified as an element added to either Pathway 1 or Pathway 4, with an incremental BCR of 1.8.

43. Therefore, each of the elements of the Recommended Plan remains incrementally economically justified.

1. close of the period for expressions of interest in November of '03, to be followed by issuance of a request for proposals
2. close of the period for submission of proposals in April of '04, to be followed by
3. selection of a construction contractor in June of '04, contemplating construction completion in late 2006 or early 2007.

V ENVIRONMENTAL COMPLIANCE

44. Environmental compliance for Recommended Plan consists of four elements, as described below:

- Clean Air Act compliance,
- Magnuson-Stevens Fishery Conservation and Management Act compliance,
- Habitat Mitigation, and
- Dredged Material Management.

CLEAN AIR ACT COMPLIANCE

45. The District has formulated a plan to comply with the Clean Air Act (CAA) that identifies the least expensive alternative without incurring extra project implementation risk. The HDP involves using Federal planning, design, supervision and cost sharing of construction activities to deepen channels within the New York and New Jersey Harbor. The General Conformity Rule (GCR) (§176(c)(1) of the CAA) requires that Federal Actions, which are defined as "any activity engaged in by a department, agency, or instrumentality of the Federal government, or any activity that a department, agency or instrumentality of the Federal government supports in any way, provides financial assistance for, licenses, permits, or approves…", do not interfere with states' efforts to attain or maintain ambient air quality standards in a timely manner in accordance with the Environmental Protection Agency (EPA) approved State Implementation Plans (SIPs). The GCR requires that Federal agencies document a conformity review through a conformity determination.

46. The *New York and New Jersey Harbor Navigation Study Feasibility Report* (*Feasibility Report*) along with its accompanying Final Environmental Impact Statement (EIS) for the HDP was completed in 1999. The EPA commented that the conformity review of air impacts required further analyses and information. The Recommended Plan study area is located within the New York - Northern New Jersey - Connecticut severe non-attainment area for ozone, which is composed of oxides of Nitrogen (NO_x) and volatile organic compounds (VOCs). In addition to ozone, the study area is a maintenance area for carbon monoxide (CO), which has a *de minimus* standard of 100 tons per year of CO. Preliminary emission estimates showed that the project emissions from construction would exceed the *de minimus* standard of 25 tons per year of NO_x, thus triggering the requirement that a conformity determination for ozone, followed by a Statement of Conformity (SOC), be prepared detailing how the entire project emissions would be reduced, mitigated or offset to zero. Offsetting is reducing emissions from project related sources or elsewhere within the non-attainment area that compensate for a project emission, thus resulting in no net increase in a particular pollutant's level within

the non-attainment area. Emission estimates for CO showed that the project emissions would not approach or exceed the CO trigger level and therefore, for CO the project meets the GCR requirements.

47. Various agencies involved with air quality in the region discussed how to bring the HDP into compliance. In November 2001, the Regional Air Team (RAT) was created to facilitate discussions between the EPA Region 2, the United States Army Corps of Engineers (USACE), the Port Authority of New York and New Jersey (PANYNJ) and the states of New York (NYSDEC) and New Jersey (NJDEP). Through the coordination of the RAT members and leadership of USACE- New York District (NYD), the team was able to develop a conditional Statement of Conformity (cSOC). This was the first time a conditional Statement of Conformity had ever been produced. It laid out a process to reach General Conformity before construction begins.

48. The cSOC commits USACE as the Federal agency to bring the project into compliance prior to the start of construction. The cSOC serves as a guidepost for attainment, identifying various strategies to be investigated to achieve conformity. USACE would pursue real reductions of project emissions, *as technologies are available*, as well as the use of credits, offsetting project emissions, and inclusion of all or part of the project emissions into one or both SIPs.

49. In accordance with the cSOC, various emission reduction strategies and technologies were identified in an initial findings report. The technologies identified were: low sulfur fuels and fuel additives; engine retrofits and filters; oxidation catalysts and electric dredges. Ideas were solicited from the dredging industry and port facility operators. The PANYNJ produced an inventory of existing emissions at PANYNJ facilities and listed technologies with the potential to offset some of the project emissions. USACE also evaluated emission reduction opportunities at its facilities.

50. Project emissions that could not be reduced through measures mentioned above would be reduced through purchase of existing air credits or by offsetting emissions within the non-attainment area or by the states' accommodating the project in their SIPs. In both the unconsolidated and consolidated implementation cases, the 25 tons per year standard for NO_x is triggered for all years,[23] necessitating emission reduction to zero (net) in every year in order to achieve General Conformity as required by the CAA.

51. In December 2002, the USACE (NYD) received air mitigation guidance from USACE Headquarters that allowed the District to pursue air mitigation in a path similar to wetlands mitigation. The guidance followed the prioritization established for wetlands mitigation: first at the project construction site, and if not at the project construction site, then nearby and within the non-attainment area. For air mitigation the priorities were established first to seek out mitigation on public/governmental marine vessels, then

[23] In 2013, projected emissions do not exceed the 25 tons per year of NO_x threshold. However, the GCR states that if a Federal action triggers the GCR in any year, that the emissions need to be reduced down to zero in all years.

private marine vessels, and lastly from on-road vehicles. Public sources are a priority as it reduces contracting difficulties with private industries and reflects the government's commitment to improving air quality through sources that are used by the public.

52. Various combinations of strategies were researched that would bring the project into compliance. The Harbor Air Mitigation Plan (HAMP) is a detailed analysis of these strategies and the recommended plan. The HAMP reviews the strategies outlined in the cSOC, highlights a selected group of applications of those strategies, and arranges them according to the priorities in the Headquarters memo. The goal is to choose a plan that is cost effective and that fully complies with the CAA.[24]

53. Real reductions on site, at best, would only eliminate up to 40% of the Project's emissions. With any strategy chosen, the use of additional credits or offsets would be needed to achieve the necessary full emissions reductions. However as credits are not available for non-stationary sources and the emissions trading program in New Jersey is being phased out, offsets will make up the bulk of compliance strategies.

54. Offsets require establishment of concurrent administrative and monitoring programs to track the emissions derived from the offsets to ensure sufficient reductions are being made to offset actual project emissions fully. This is part of the enforceability requirement of General Conformity. Currently the most effective offset options consist of retrofitting or repowering marine vessels that operate a significant amount of time within the non-attainment area, primarily targeting tugboats, or the use of emission reduction technologies on local ferries.

55. Tugboats are relatively inexpensive to retrofit, but they also produce relatively small amounts of offset, are subject to being idled by unfavorable business conditions, and, because they are privately owned, are also susceptible to being moved to conduct operations outside the non-attainment area. Moreover, the number of tugs that are being operated in the non-attainment area and that can be retrofitted is insufficient to produce the total quantity of offsets required in the peak years of HDP construction.

56. Government operated ferries; such as the Staten Island Ferry have several advantages as compared to the repowering of tugs or the retrofitting of private ferries. They are not subject to being idled (and therefore not producing emissions offsets) as a

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[24] The HAMP deals only with emissions from the construction of the project. This is because emissions stemming from O&M activities are not subject to the GCR. See 40 CFR §93.153(c)(2)(ix), which reads in pertinent part:

> The requirements of this subpart shall not apply to the following Federal actions: …(ix) Maintenance dredging and debris disposal where no new depths are required, applicable permits are secured, and disposal will be at an approved disposal site.

All three of those conditions are fulfilled in this case. Therefore, the General Conformity Rule does not apply to the O&M aspects of the HDP and the HAMP need not deal with emissions stemming from HDP O&M dredging.

result of unfavorable business conditions, nor will they be taken outside of the non-attainment area to pursue better business opportunities. Moreover, they are sufficiently numerous to have the potential to offset all of the HDP construction emissions (the Staten Island Ferry fleet is the largest discrete unregulated source of marine emissions in the non-attainment area). Accordingly, they are accorded a preference in the USACE Headquarters memo. For these reasons, the Staten Island Ferries were prioritized, as a choice emission reduction source.

57. That being said, because of the long lead time in getting the Staten Island Ferry boats retrofitted and because of the relatively low HDP construction emissions in the first two years, a combination of credits and tug-repowering is needed in the beginning years to bridge the gap and to better match project emissions during the early period.

58. The current HAMP strategies consists of:

- The purchase of emissions credits in the current period,
- The re-powering of a total of six to eight tug-boats, and
- The retrofitting of all seven boats of the Staten Island Ferry system.

59. The sources of variability and costs of implementation being slowed or interrupted were also factors that were considered. Project implementation risk is the risk that implementation of the project will be slowed or halted because of a lack of sufficient offsets to cover project emissions. The sources of variability that contribute to this risk are the performance of emission reduction equipment installed on the vessels of the dredging fleet, the utilization of repowered vessels, and the performance of emission reduction equipment installed on the retrofitted ferry vessels. The primary costs associated with the adverse event (*i.e.*, having to slow or temporarily halt implementation of the HDP) would take the form of the opportunity cost of delay; increased interest during construction and delayed realization of project benefits. The magnitude of these costs depends on the length of the delay (more delay produces more cost) and the point in the construction sequence at which the delay occurs.

60. The total cost of the preferred alternative is $13,506,000. In addition to this cost, over the life of the HAMP, it is estimated that an additional $2,000,000 will be needed to monitor and coordinate operations to confirm the necessary offsets are being generated. It is the least cost alternative and it is among the alternatives that presents the lowest level of risk that implementation of the project will be delayed or interrupted for lack of sufficient offsets to cover project emissions in any given period.

61. Credits and offsets would be secured by the PANYNJ according to the plan set forth in this LRR. As the basis for the PCA, the LRR would, effectively, set the unit prices of the credits and offsets. The HDP would, in effect, “buy” credits and offsets as required from the PANYNJ. The Government and the non-Federal sponsor would share the expense of the credits and offsets just as they would any other expense of construction the General Navigation Features of the project. Units of offset produced by

the repowerings and retrofittings that turn out not to be required to offset actual project emissions will not be purchased by the project and will remain available to the PANYNJ.

62. If all of the offsets produced through implementation of the HAMP and its contingencies are not required by the HDP construction, there would be a long-term net improvement in the air quality in the non-attainment area during and after project construction because the repowered tugs and retrofitted ferries will continue to operate after the project is completed; there will be a legacy of reduced air emissions over the long-term, thanks to the recommended plan. The region will be left with cleaner air and more efficient marine cargo movement. Furthermore, implementation of the project will make it possible for marine carriers to bring more containerized cargo to and from the Port per vessel call, resulting in fewer vessel calls than would otherwise have been the case and thereby further reducing future emissions.

63. A draft of the HAMP was publicly released in November 2003. The first annual SOC will be publicly released in Spring 2004. Separate SOCs will be produced prior to start of each construction element.

MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT COMPLIANCE

64. In accordance with the above act the District evaluated potential impacts to Essential Fish Habitats as part of the *Feasibility Report.* As a conservation measure to avoid or minimize impacts to managed species, especially winter flounder, seasonal windows were placed on dredging in selected portions of some channels. These windows were taken into account in scheduling dredging operations for the HDP and its Predecessor Projects. Because consolidated implementation will not result in impacts beyond those attributed to the Recommended plan, no additional conservation measures are necessary and no further windows or other restrictions on dredging are necessary. Since the release of the *Feasibility Report* the District has conducted further biological sampling to supplement existing data from the *Feasibility Report.* With this new information, the District has re-evaluated potential effects to Essential Fish Habitat (EFH) and has reinitiated consultation with National Marine Fisheries Service in the hopes of reducing or eliminating some of the seasonal windows. This would result in a greater flexibility in scheduling dredging operations and a potential cost savings to both the consolidated and unconsolidated implementation plans. The District has also investigated the potential to create EFH in the Harbor as an alternative to one or more seasonal restrictions and/or a cost-effective beneficial use of material for the HDP. Both of these measures could similarly result in cost savings to either consolidated or unconsolidated implementation. None of these measures would result in additional restrictions or cost increases. For more detail, see *Appendix E* of the *Environmental Assessment*.

HABITAT MITIGATION

65. The District in cooperation with the Port Authority is finalizing the mitigation plans proposed in the Feasibility Report for impacts to littoral zone habitat during construction of the Recommended Plan. The proposed mitigation sites are located in Old Place Creek, New York and Woodbridge Creek, New Jersey and involve the creation of intertidal habitat from existing common reed grass areas. However, apart from securing rights necessary for berthing areas and in connection with utility relocation, the District and the Port Authority recognize, with respect to wetland mitigation, that while wetland impact mitigation is necessary to satisfy State and Federal requirements, there nevertheless must be an allowance for flexibility in the Real Estate Plan as to the method of satisfying such requirements. For instance, with the agreement of the regulatory agencies in the affected states, a purchase of wetlands bank credits or obtaining rights of entry to enable wetland enhancement by the Corps, its contractors or third parties may suffice in lieu of property interest acquisition, particularly if the lands in question contain contaminated soils or groundwater. The objective would be to minimize potential liability for environmental contamination. Mitigation location opportunities are the same for both consolidated and unconsolidated implementation of the Recommended Plan but do represent a change in one location – the Mariner's Harbor site in the Feasibility Report is being replaced by the Old Place Creek site. For more information, see Appendix D – Real Estate Plan of the Limited Reevaluation Report and Environmental Assessment on Consolidated Implementation of the New York and New Jersey Harbor Deepening Project."

DREDGED MATERIAL MANAGEMENT

66. There are three types of dredged material that must be accounted for in the least cost analysis of placement options for the HDP: rock, HARS-suitable material, and non-HARS suitable material. As described in the District's established Dredged Material Management Plan (DMMP) Program, the rock is to be used to create or enhance fish and lobster habitat (reefs) and the HARS suitable material is to be used to cap (*i.e.*, to sequester from the water column) material placed in the past at the designated Historic Area Remediation Site (HARS). There are no tipping fees associated with these placement options and the transportation cost is not susceptible of further reduction (being equal to an average of approximately $1.00 - $4.00 per cubic yard) without utilizing alternative sites that do charge a tipping fee. It is also worth noting that there are incidental environmental benefits associated with these placement options. Therefore, it is clear that this type of material is being placed in the least costly environmentally acceptable manner.

67. Together, rock and HARS suitable material represent 87% of the total volume of material to be dredged for the HDP (*i.e.*, 36,901,000 of a total of 42,501,000 cy.). The remaining 13% is non-HARS suitable material. The District's DMMP describes a number of options for the placement of this material. Those placement options can be

broadly classified into the contained aquatic disposal (CAD) category and the upland remediation/use category.

68. When the *Feasibility Report* was written, CAD placement of non-HARS material was a permissible option. Since that time, the state agencies in both New York and New Jersey that are responsible for issuance of water quality certificates (WQCs) have indicated in writing that they will no longer issue a WQC for any dredging activity for which CAD placement of non-HARS suitable material is requested when upland remediation/use options are available for the material at a comparable price. As all of this non-HARS material is expected to meet upland placement criteria in the region (NY, NJ and PA), the construction of additional CAD placement options beyond the existing Newark Bay Confined Disposal Facility are not implementable options for the HDP. The remaining options for the placement of non-HARS material generated by implementation of the HDP all involve upland placement.

69. As of this writing, all three of the Predecessor Projects are being implemented. Each of them is being implemented by way of three or more construction contracts that involve the excavation of the material to be dredged; transportation of the material, depending on its character, to an appropriate placement site; and placement itself, which often times involves a tipping fee. The non-HARS material from these contracts is placed through a process of competitive bidding. In the dredging contracts through which these projects are being implemented, upland placement, when appropriate, has taken place at privately developed and operated facilities, many of which involve remediation and development of brownfield, landfill and abandoned coal mine sites. The tipping fee charged by those private facilities is a matter of negotiation between the facility and the dredging company and is an element of the contract bid prepared by each dredging company that bids on a particular contract. Thus, the process of competitive bidding should continue to provide the Government with the combination of excavation price, transportation price, and tipping fee that minimizes the cost of project implementation on a contract-by-contract basis.

70. As a result of this competitive bidding process, the District has directly relevant information on the market price of upland placement that is derived from its current experience. Recognizing that there is no reason to presume that there will be a sharp break with the recent past, the District has utilized its most recent market experience in the preparation of the current estimate of project cost. Of course, at the time each contract is bid, the price of upland placement may be higher or lower than that assumed in the current cost estimate (remediable brownfield, landfill and coal mine sites are numerous in the vicinity of the Port, suggesting that the price of upland placement is more likely to fall in real terms than it is to rise. In fact, recent contracts awarded by the District on the Predecessor Projects generally indicate this trend.), but the process of competitive bidding should ensure that the cost of project implementation is always the lowest available, on a contract-by-contract basis, at the time implementation takes place.

71. Since the Feasibility Report, the PANYNJ, the States of New York and New Jersey, in partnership with the District, has devoted a great amount of planning effort to ensure that all dredged material has a final disposal site when needed and which is the least cost and environmentally preferred site. The result of this effort is the revised project specific DMMP shown below. These disposal locations are the Historic Area Remediation Site (HARS), the EN-CAP landfill, Shark River Reef (Shark RR), GATX or Port Reading or the National Lead site (GATX/PR/NL), and the Pennsylvania Mines and New York and New Jersey Quarries (PAM/NYQ/NJQ). These sites were identified in the 1999 Dredged Material Management Plan[25] and either already are or are expected to be fully permitted before the plan calls for their utilization. The schedule of planned placement of this material is as follows:

Table 2 – Quantity of Material to be Excavated and Planned Placement

CONTRACT	START DATE	VOLUME TO BE EXCAVATED	PLANNED PLACEMENT				
			HARS	En-Cap	Shark R.R.	GATX/PR/NL	PAM/NYNJQ
S-PJ-1	June-04	4,013,000	3,413,000	594,000	6,000		
S-KVK-2	October-04	4,568,000	1,860,000	261,000	2,447,000		
S-AM-1	June-05	5,624,500	5,624,500				
S-AN-1	October-05	1,684,000	1,478,000	206,000			
S-NB-1	October-05	3,200,000	2,063,000	1,083,000	54,000		
S-AK-1	September-06	822,000	304,000		409,000	109,000	
S-KVK-1	January-08	2,256,000	1,363,000	110,000	783,000		
S-AK-2	January-08	759,000	389,000		332,000	38,000	
S-AM-2	June-08	5,624,500	5,624,500				
S-AN-2	June-08	2,760,000	2,209,000	551,000			
S-AK-3	January-09	1,837,000	432,000		1,405,000		
S-NB-2	June-09	3,021,000	2,670,000		149,000		202,000
S-BR-1	October-10	4,813,000	2,960,000			1,853,000	
S-E-1	April-11	1,519,000	898,000		28,000	593,000	
	TOTAL	42,501,000	31,288,000	2,805,000	5,613,000	2,593,000	202,000

All excavation quantities are in cubic yards. The volume of dredged materials to be produced by implementation of the AK-41/40 and PJ-41 projects is accounted for in the DMMP separately from the volume listed in the table above.

72. More information on dredged material management, including costs, may be found in the *Cost Appendix*.

CONCLUSION

73. In light of the foregoing, the District concludes that the Recommended Plan remains environmentally acceptable. This is so whether implementation of the Recommended Plan is consolidated or not.

[25] *Dredged Material Management Plan and Draft Programmatic EIS for the Port of New York and New Jersey*, September 1999.

VI OPPORTUNITIES FOR AND EFFECTS OF CONSOLIDATED IMPLEMENTATION

74. One of the purposes of this document is to respond to *The Conference Report on the Energy and Water Appropriations Act of 2002*, which combined the appropriations of Predecessor Projects with the Recommended Plan and directed the Corps to study project consolidation opportunities.

75. This section is written in two parts:

- The first summarizes the District's findings relating to consolidated implementation of Predecessor Projects with the Recommended Plan.
- The second assesses whether, and to what extent, the non-Federal sponsor should be credited for costs incurred for work performed in advance of execution of a PCA to implement the Recommended Plan. This is intimately related to the District's findings, as the work advanced is consolidation-based.

CONSOLIDATION OPPORTUNITIES

76. Consolidated implementation refers to the concurrent excavation of the remaining parts of the Predecessor Projects and the corresponding parts of the Recommended Plan. This is in contrast to unconsolidated implementation, which refers to implementing the Predecessor Projects and the Recommended Plan serially, exactly as set forth in their respective decision documents. The principal advantage of consolidated implementation is the avoidance of:

- Repeated set-up of drilling and blasting equipment;
- Repeated blasting, with its attendant environmental and social effects; and
- Repeated mobilization and demobilization of dredged material excavation, transportation, and processing operations.

77. Another advantage of consolidated implementation is that it might make realization of the benefits of 50-foot channel access available at an earlier date than unconsolidated implementation would have. Along the same lines, a disadvantage of consolidated implementation is that it might delay realization of the benefits of the channel depth that would have been available on completion of the Predecessor Project channel depth.

78. Thus, it is possible for consolidated implementation to present a trade-off as between decreased excavation cost and increased opportunity cost in the form of delay in the availability of and realization of the economic benefits from the channel depth of the Predecessor Project. The net benefit of consolidated implementation of any given channel or part of a channel would be:

$$\text{net benefit} = \begin{pmatrix} \text{dredging cost reduction} \\ -\text{opportunity cost of delay in Predecessor Project depth benefits} \\ +\text{increase in 50 ft benefits because they occur earlier} \end{pmatrix}$$

After careful study of all aspects of consolidated implementation, the District has concluded that, in general, it is likely to be advantageous only in those areas in which rock or other hard material is predominant in the channel segment to be dredged.

Opportunities from Predecessor Projects

79. Tables 3 and 4 below summarize, respectively, the cost savings and schedule impacts of consolidated implementation. The effect of consolidated implementation on the overall HDP construction schedule is to shorten it by 2 months. 50-foot use, however, of the Kill Van Kull and Newark Bay Channels occurs 26 months earlier.

Table 3 - Dates of Channel Access With and Without Consolidated Implementation

	Unconsolidated	Consolidate KVK 4b, 5; and AK 2, 3	Consolidate KVK 4b and 5
50ft Channels			
Ambrose	Dec 09	Oct 10	Oct 10
Anchorage	Mar 10	Oct 10	Oct 10
Kill Van Kull	Jan 15	Jul 11	Jul 11
Newark Bay	Oct 14	Nov 12	Nov 12
Arthur Kill	Jan 11	Jun 11	Mar 11
Port Jersey	Sep 08	Jun 07	Jun 07
Bay Ridge	May 14	Mar 14	Mar 14
50ft pathways to Container Terminals			
KVK/NB	Jan 15	Nov 12	Nov 12
Arthur Kill	Jan 11	Jun 11	Mar 11
Port Jersey	Sep 08	Jun 07	Jun 07
Bay Ridge	May 14	Mar 14	Mar 14
Predecessor Project Depth Availability			
KVK/NB-45	May 04	May 04	May 04
AK-41	Sep 05	Apr 11	Sep 05
AK-40*	Sep 06	Apr 11	Sep 06
PJ-41	May 07	May 07	May 07

* not including former GATX reach

Table 4 - Comparison of Consolidated and Unconsolidated Costs ($000)

Item Description	Consolidated	Un-Consolidated	Savings
Arthur Kill	$137,100	$141,400	$4,300
Anchorage	$160,200	$162,500	$2,300
Bay Ridge	$149,800	$152,100	$2,300
Kill Van Kull 50 (excluding Area 5)*	$241,900	$253,700	$11,800
Kill Van Kull 50 (Area 5, 45-50)	$104,900	$105,500	$600
KVK 45 unawarded (Area 4b)*	$0	$37,200	$37,200
PJ-41 unawarded (CT 3)**	$0	$33,200	$33,200
Newark Bay	$308,100	$314,800	$6,700
Port Jersey	$97,300	$97,300	$0
Ambrose	$84,500	$86,900	$2,400
TOTAL ALL PROJECTS CONSTRUCTION	**$1,283,800**	**1,384,600**	**$100,800**

* If KVK 45 4b was constructed as a standalone contract its cost would be $37,200,000. However, by consolidating this work with KVK/NB-50 the cost of this element of work would be approximately $10,200,000, and is included in the consolidated KVK/NB-45 cost of $241,900,000.

**The construction of the Port Jersey 50-foot contract will render this element of work functionally obsolete. The proposed consolidation plan is to never dredge the area known as PJ-41 CT3 and therefore realize a savings of $33,200,000.

Kill Van Kull

80. Two consolidation opportunities that would provide significant project cost savings exist in Kill Van Kull. These are:

- KVK/NB Contract Areas 4b – This is the last segment of the KVK/NB-45 to be implemented. The contract area is located at the far western end of the Kill Van Kull. The District recommends dredging this area under Contract S-KVK-2 directly to 50 feet.

- KVK/NB Contract Area 5 - This segment is the inside of the turn at Bergen Point. The KVK/NB-45 segment of this work was awarded in December of 2001. Recognizing a cost-saving opportunity, the PANYNJ awarded an additional contract to the Corps' contractor to dredge the contract area's footprint to 52 feet. As a result, vertical consolidation of this area has already been accomplished. The PANYNJ will seek reimbursement for this action after the execution of this project's PCA.

81. According to the information given in Tables 3 and 4, above, consolidation of Kill Van Kull Channel Contract Areas 5 and 4b would produce excavation cost reductions of $12,400,000 and $37,200,000, respectively. The availability of the 45-foot channel would not be delayed at all and the availability of the 50-foot channel would be advanced by 30 months. Thus, there are only cost savings and benefit increases to be had from consolidating the implementation of the Predecessor Project and the Recommended Plan

in these two areas. Therefore, consolidated implementation of these two areas is recommended.

Arthur Kill

82. A substantial volume of rock will need to be dredged from the Arthur Kill Channel, with the greatest percentage concentrated in Contract Area 3, making it the most viable vertical consolidation opportunity in Arthur Kill. For this reason, the District considered vertical consolidation for this area but found it undesirable as it would delay the realization of the benefits of the Predecessor Projects by approximately 67 months. This case is further complicated by the fact that consolidated implementation of Arthur Kill Channel would (1) advance the date of availability of the 50-foot channel by four months, but (2) delay the date of availability of the 41-foot channel by 67 months. The excavation cost reduction is $40,000,000 to $50,000,000. The opportunity cost of delaying the realization of the benefits of the 41-foot channel by 67 months is $185,767,000, and the benefit of advancing the availability of the 50-foot channel is $15,857,000. Substituting these numbers into the net benefits equation gives -$141,910,000 to -$131,910,000.[26] In light of this finding, consolidated implementation of Arthur Kill Channel is not economically justified.

Port Jersey

83. Parts of the PJ-41 project are currently under construction. Note that the footprint of PJ-41 as authorized differs from the footprint of the Port Jersey element of the Recommended Plan. Specifically, as compared to PJ-41, the footprint of the Port Jersey Channel of the Recommended Plan excludes the turning basin at the western end of the channel and substitutes part of the southern end of the eastern edge of the channel with a widening of the eastern end of the channel at its northern edge.

84. These changes in footprint are a result of a USACE Value Engineering study and recent ship simulation studies. The turning basin is no longer considered safe or practical to use in light of the fact that Post-Panamax container ships comprise a growing proportion of the fleet calling at Port Jersey each year. The changes to the eastern end of the channel are also predicated on safety considerations. The effect on the quantity of material to be dredged is a net increase. Despite the increase in the net volume, the cost does not change. The reason for this lies in the characterization of the material to be dredged.

85. The dredging in PJ-41 that is to be permanently deferred would have required upland placement of the dredged material. The dredging that is to be added will generate material that can be placed at the HARS. Because placement at the HARS is less expensive than upland placement, the costs of dredging the deferred area and the added area are equal.

[26] Evaluation of interest during construction and discounting of benefit flows was done using the Federal discount rate for water resources projects for FY '04, $5^{5}/_{8}$%.

86. The opportunities for consolidated implementation can best be understood with reference to the cross-section of the PJ-41 channel and the Port Jersey portion of the Recommended Plan. The relevant cross sections are at A-A' and B-B' in Figure 4, below:

Figure 4 – Port Jersey Channel Cross-Section Reference

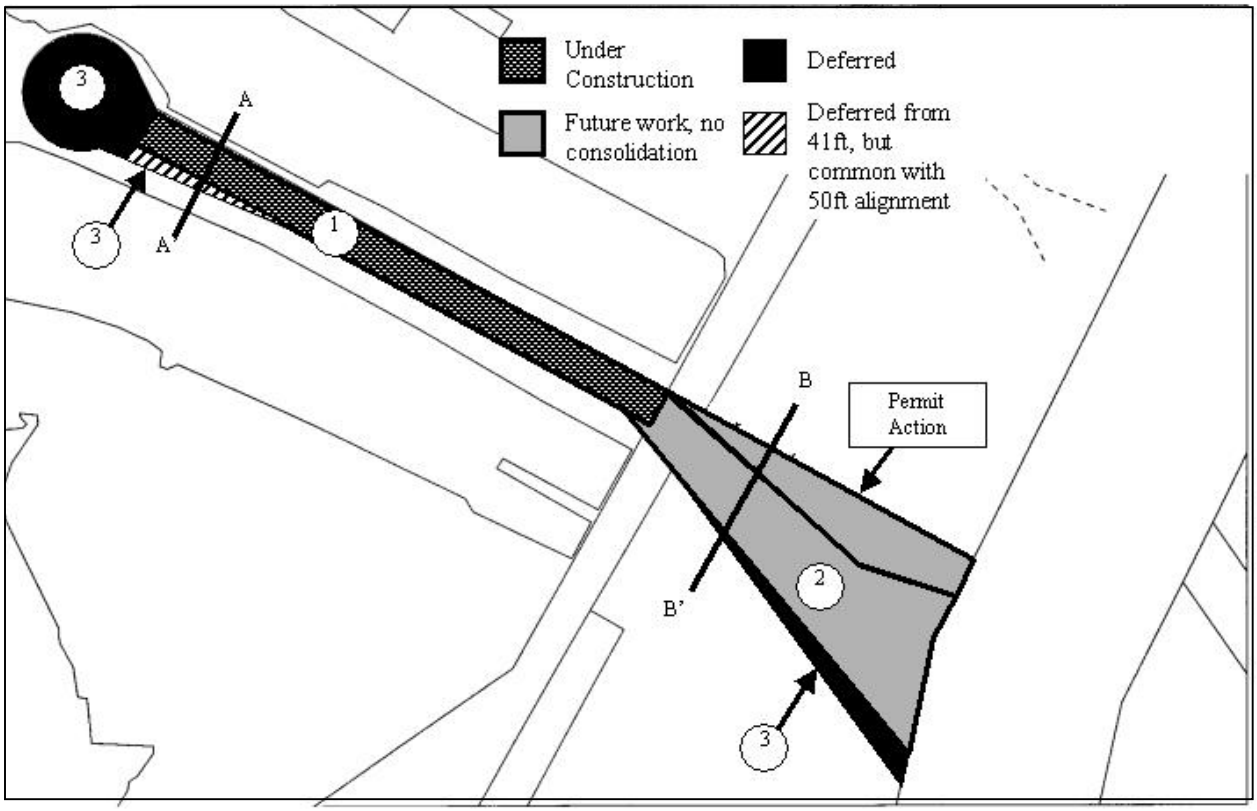


Figure 5 – Port Jersey Channel Cross Section A-A'

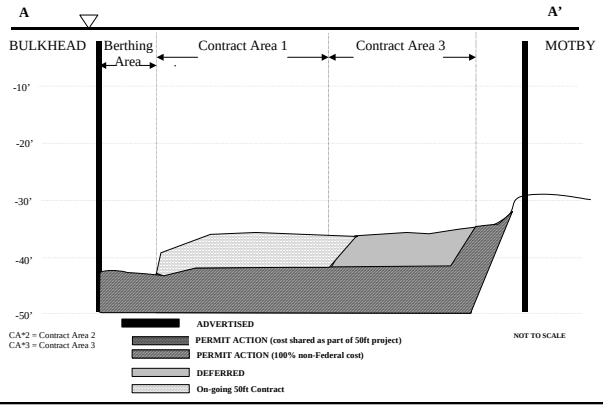
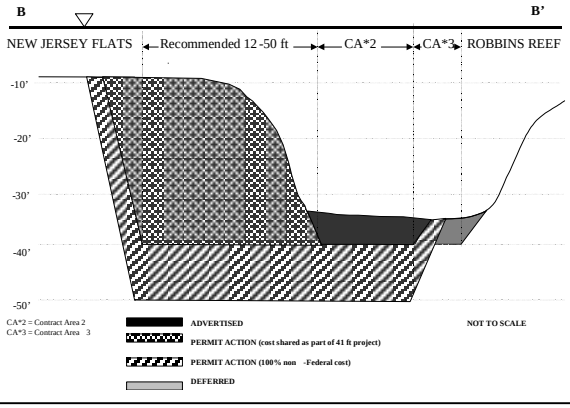


Figure 6 – Port Jersey Channel Cross Section B -B'



87. These opportunities for consolidated implementation would be available if the Federal government were in position to implement the Port Jersey Channel portion of the Recommended Plan at this time. The Federal government will not be in position to cost share the Port Jersey Channel portion of the Recommended Plan until the condition precedent established by the Office of Management and Budget (OMB), as modified by the Energy and Water Appropriations Act of 2004,[27] is satisfied.

88. The condition precedent stems from a letter from the Acting Deputy Associate Director for Energy and Science at OMB to the then Assistant Secretary of the Army (Civil Works) Joseph W. Westphal.[28] The letter specifies that a container facility must be operational at the MOTBY site prior to the construction of the 50-foot deepening of the Port Jersey Channel, and includes the following language:

> *We note that the Corps of Engineers' economic analysis supporting this authorization assumes in the "without project condition" that a container facility at the former Military Ocean Terminal at Bayonne (MOTBY) is operational prior to initiating the 50-foot deepening of the Port Jersey Channel and that the South Brooklyn Marine Terminal and related transportation infrastructure are in place when the Bay Ridge Channel construction is complete. To ensure that the expected benefits of this project are realized, we believe that it is important to modify the items of local cooperation recommended in the Report of the Chief of Engineers by adding one element and changing another element. Specifically, the local sponsor should agree that: 1) The container facilities at the MOTBY site at Port Jersey will be operational prior to the construction of the 50-foot Port Jersey Channel; and 2) the South Brooklyn Marine Terminal and related infrastructure will be under construction and scheduled to be completed concurrently with the Bay Ridge Channel.*

89. The Chief of Engineers incorporated the suggested item of local cooperation into the *Chief's Report*. Note that the condition precedent applies only to the Port Jersey Channel portion of the Recommended Plan; it is not a bar to Federal participation in cost sharing the PJ-41 project. As of this writing, the condition precedent to Federal participation in cost sharing the Port Jersey Channel portion of the Recommended Plan has not been satisfied. The eventual satisfaction of the condition precedent was made easier to accomplish by the Energy and Water Resources Development Appropriations Act of 2004 (P.L. 108-137), which reads in pertinent part:

> *…Provided further, That no funds made available under this Act or any other Act for any fiscal year may be used by the Secretary of the Army to carry out the construction of the Port Jersey element of the New York and New Jersey Harbor or reimbursement to the Local Sponsor for the*

[27] P.L. 108–137, 1 December 2004.
[28] A copy of this letter is provided in the Appendix titled *Pertinent Correspondence*.

construction of the Port Jersey element until commitments for construction of container handling facilities are obtained from the non-Federal sponsor for a second user along the Port Jersey element:

90. This language modifies the items of local cooperation incorporated at the suggestion of OMB in two respects: (1) Federal cost sharing participation in construction of the channel may begin after the non-Federal sponsor provides commitments for construction of an additional container-handling facility along Port Jersey Channel to be utilized by a second user, and (2) the additional container-handling facility need not be located at the former MOTBY site.

91. Believing that the condition precedent will eventually be satisfied, the State of New Jersey is prepared to obtain a permit from the Department of the Army (DA) to construct the Port Jersey Channel portion of the Recommended Plan without Federal cost sharing on condition that (1) they be allowed to apply for reimbursement under the terms of §101(a)(2)(B)(ii) of WRDA '00 or §204(e) of WRDA '86 (codified as 33 U.S.C. §2232(e)), as applicable, once the condition precedent is satisfied and (2) they be allowed to modify the PJ-41 PCA so as to make the footprint therein referred to congruent with the footprint of the Recommended Plan. The EIS that accompanied the *Feasibility Report* for the Recommended Plan covered dredging in this area to 50 feet. Because of the beneficial cost, safety and environmental effects of these changes and the net reduction in environmental impacts, the District recommends that the State of New Jersey's requested PCA modification be granted. The State has already initiated the permit application process.[29]

92. In light of the foregoing there is no consolidated implementation opportunity in Port Jersey Channel from the point of view of the Federal government unless and until the condition precedent is satisfied.

Other Cost Saving Opportunities

93. The District also recognized benefits to using larger contracts than envisioned in the Feasibility Report. Taking into consideration bonding limitations, contracts for the consolidated implementation plan are generally between $75 and $150 million. For comparison, the contracts in the construction schedule without consolidated implementation are smaller, ranging from $10 to $100 million. All contracts will be from the current authorized depth to the Recommended Plan depth, with the contractor responsible for removing all material lying within the pay prism. Figures 7 and 8, on the next two pages, illustrate the HNS and HNP contract areas.

[29] See letter dated October 8, 2003 from Richard J. Gimello to Colonel John B. O'Dowd in the Appendix titled *Pertinent Correspondence*.

Figure 7 – New York and New Jersey Harbor Navigation Study Contract Areas (Initial Contract Plan before Consolidation)

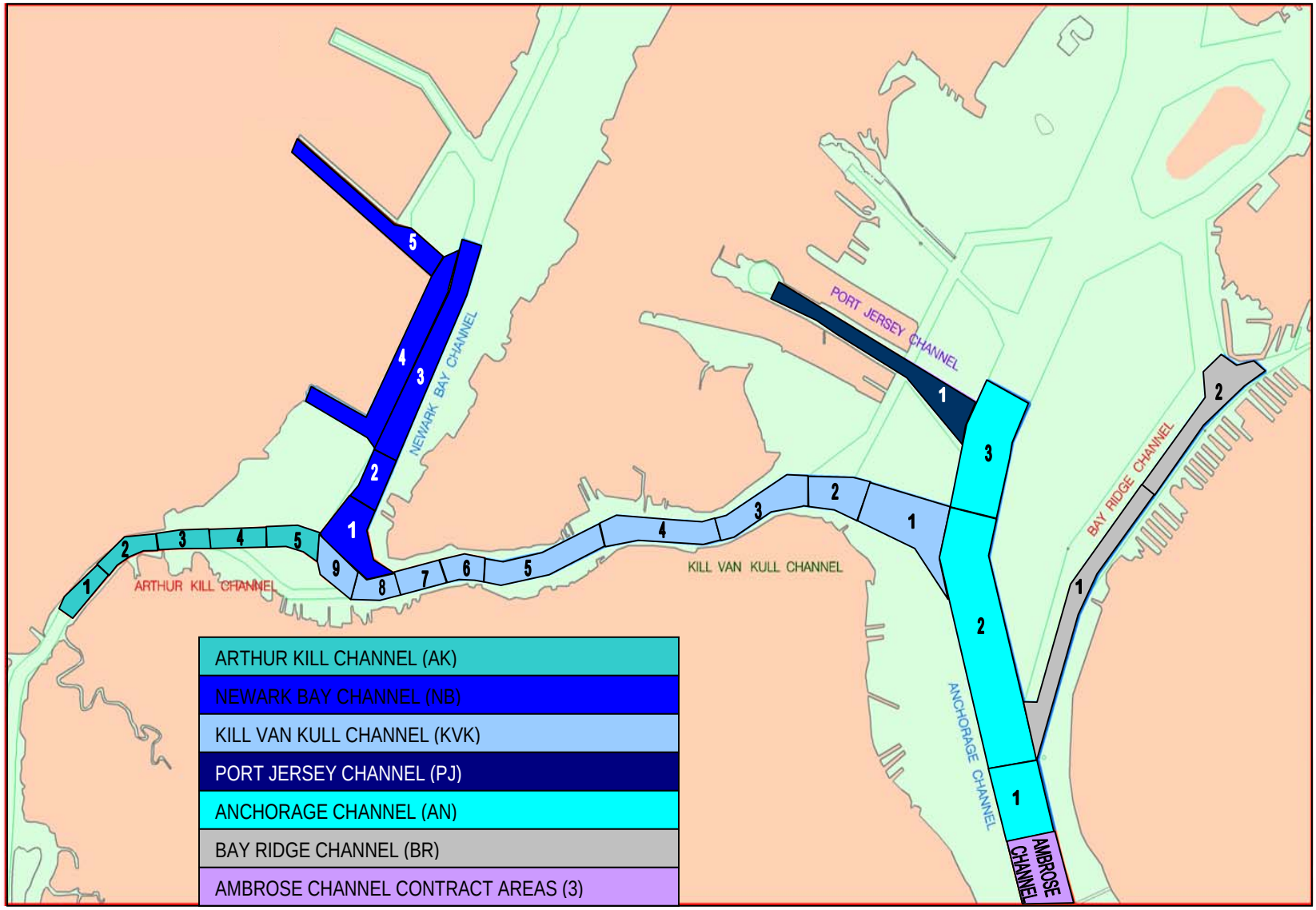
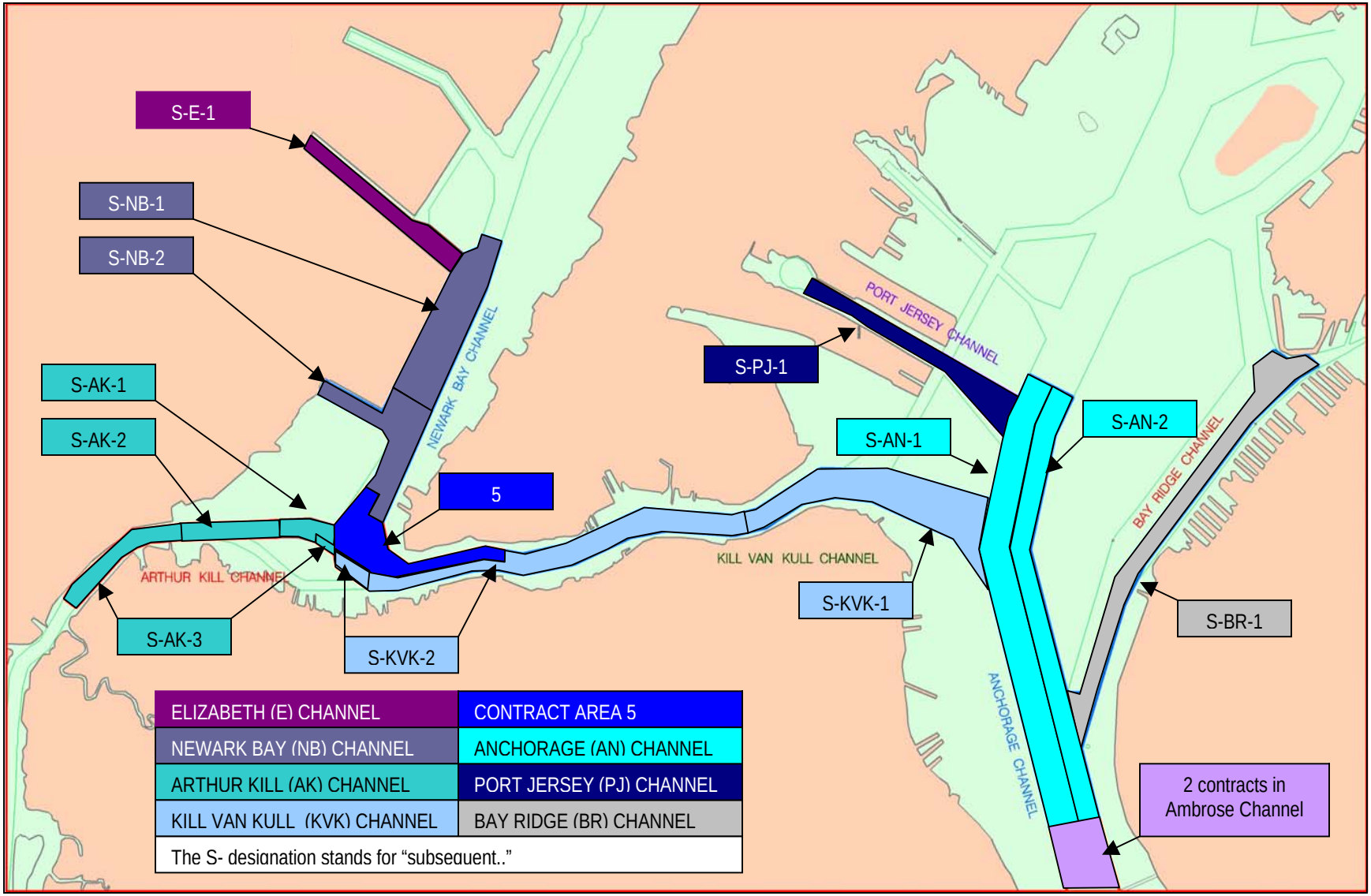


Figure 8 - New York and New Jersey Harbor Deepening Project Contract Areas



Recommendation

94. This LRR recommends excavation of KVK/NB-45 Contract Areas 4b and 5 be undertaken with the implementation of the 50-foot Recommended Plan and that larger contracts be utilized to provide flexibility for the dredging industry with respect to environmental windows and equipment mobilization.

CREDITING

95. This project's authorization presents a unique opportunity for project implementation. In §101(a)(2) of WRDA of 2000, Congress provided that the non-Federal sponsor may furnish its share of the cost of the project (of which the General Navigation Features are a part) in the form of cash, in-kind services or materials. There are no temporal restrictions on this provision. Nevertheless, §101(a)(2)(B)(ii) provides further that with respect to the cost of design and construction work carried out by the non-Federal interest before the date of the execution of a cooperation agreement for the project, the Secretary is directed to provide a credit equal to the non-Federal share of the cost of such work. Thus, this section of the report will discuss the background and rationale for the credits requested by the PANYNJ and serves as an approval request to the Secretary of the Army for the credits. For clarity, the specific section under discussion is provided below:

> *(B) NON-FEDERAL SHARE-*
> *(i) IN GENERAL- The non-Federal share of the costs of the project may be provided in cash or in the form of in-kind services or materials.*
> *(ii) CREDIT- The Secretary shall credit toward the non-Federal share of the cost of the project the cost of design and construction work carried out by the non-Federal interest before the date of execution of a cooperation agreement for the project if the Secretary determines that the work is integral to the project.*

96. The PANYNJ has requested that the Secretary of the Army approve credits that fall into two broad categories. The first is work performed prior to the PCA signing (pursuant to §101(a)(2)(B)(ii)) and work to be performed after the signing of the PCA (pursuant to §101(a)(2)(B)(i)). A summary of the requests is provided in the table below. It is noted that the table represents the request made by the PANYNJ and is therefore the maximum amount requested. The actual credit received will be subject to an audit, and will be equal to the costs actually incurred by the non-Federal interest or the cost estimated by the Government, whichever is less.

Table 5 - Summary of Amounts Requested by the PANYNJ

Credits For In-Kind Services Performed Prior to PCA Signing	
Clean Air Act Conformity Studies	$706,000
Dredged Material Management Studies	$588,000
KVK & NB Area 5	$115,710,000
Total Credit Request	*$117,004,000*
Request for In-Kind Services After PCA Signing	
Clean Air Act Conformity Implementation	$18,200,000
Port Jersey Channel	$72,800,000
Total In-Kind Services Request	*$91,000,000*
Total Request	***$208,004,000***
Amount to be applied against the non-Federal sponsors share*	***$112,322,000***

*This figure represents 54% of the total, which is the amount of the Federal share, which the non-Federal sponsor would have not normally have funded.

Credits Before the Signing of the PCA.

97. The first item requested for work performed prior to the PCA signing was for work leading toward compliance with the CAA. As discussed earlier, construction of the project cannot begin until the District demonstrates that the project is in compliance with the CAA for each administrative period of construction. The HAMP was developed to determine how to best accomplish compliance and the District and the PANYNJ agreed to develop the plan in a collaborative manner. This was done to ensure that the HAMP was completed in time to support execution of the PCA in May 2004. The work performed by the PANYNJ included a complete commercial marine vessel emission inventory and estimating tool, and a cargo handling equipment emissions inventory. It was advantageous to the Government to have PANYNJ perform both of these inventorying tasks because of its ability to more easily access the Port's terminal operators (many of whom are its tenants) and the marine industry generally. All of the work on this item has been performed.

98. The second item requested by the PANYNJ for work performed before the PCA signing is the KVK Contract Area 5 dredging to 50 feet. Both the District and the PANYNJ agreed to this work in a Memorandum of Agreement that was signed in August 2002. This MOA documented the expected costs to be incurred by the PANYNJ and other details. The work is currently on going and will be completed prior to the signing of the PCA.

99. The final area of credits required for work conducted prior to the PCA signing is in the area of the Dredged Material Management Plan. Work in this area includes investigation of possibilities for the beneficial reuse of rock, examining the potential for moving dredged material to Pennsylvania mines, and other studies directed toward ascertaining the least cost, environmentally acceptable upland management placement sites. These studies all lead to determination of the viability of a possible disposal site, and their performance is required in order for the local sponsor to fulfill its obligation to

provide a placement site for the dredged material, the placement of which is then cost shared as part of the General Navigation Features.

Credits After the Signing of the PCA

100. The PANYNJ has requested that two items be performed as in-kind services after the signing of the PCA. These items are the construction of the 41 to 50 foot increment of Port Jersey Channel and the implementation of the HAMP.

101. The State of New Jersey,[30] with the technical support of the PANY/NJ, has proposed the construction of the entire Port Jersey Channel by way of the DA permit, which has not been applied for at the time of this report. The State of New Jersey places a high value on the Port Jersey Channel and the Global Marine Terminal. As such, the State desires a 50-foot channel there as quickly as possible in order to accrue benefits as soon as possible. Because the Corps may not, consistent with the condition precedent suggested by OMB, cost share in the construction of the 41 to 50 foot increment of Port Jersey Channel until there is an operational container-handling facility in addition to Global Terminal,[31] this credit would not be applied for unless and until a container-handling facility in addition to Global Terminal becomes operational on Port Jersey Channel.

102. The contemplated deepening work at Port Jersey (MOTBY site) and the South Brooklyn Marine Terminal is now part of consolidated New York and New Jersey Harbor Deepening Project (HDP), as indicated in the Conference Report:

> *The Conference Report for the Fiscal Year (FY) 2002 Appropriation Act (U.S. Congress House, Conference Report on the Energy and Water Appropriation Act of 2002, 107th Cong., 1st Ses., 2002. H. Rpt. 107-258.) provides that [t]he conferees are aware of the urgent need to facilitate efficient construction of improvements for New York and New Jersey Harbor to meet the needs of navigation interest and save significant Federal and non-Federal resources. Therefore, the conferees direct the Secretary of the Army to combine the previously authorized Arthur Kill, Howland Hook Marine Terminal, New York and New Jersey, project; the Kill Van Kull and Newark Bay Channel, New York and New Jersey, project; the New York and Adjacent Channels, Port Jersey, New Jersey, project into a single project designated the New York and New Jersey Harbor, New York and New Jersey, project. The conferees have combined the Construction, General and General Investigations budget amounts for these projects and provided $88,5000,000 for the New York and New Jersey Harbor project. The Secretary of the Army is directed to use these*

[30] Recall that the PANYNJ is the non-Federal sponsor for the entire Recommended Plan, including the portion for the Port Jersey Channel from 41 ft to 50 ft. The State of New Jersey is the non-Federal sponsor for the Port Jersey Channel from its existing depth to 41 ft.

[31] This is so even in light of the language pertaining to Port Jersey Channel in the Energy and Water Resources Development Appropriations Act of 2004 (P.L. 108-137).

funds to continue construction of the combined New York and New Jersey Harbor project to the depths authorized in the Water Resources Development Act of 2000.

103. Section 101(a)(2)(B)(ii) of WRDA 2000 (Public Law 106-541, 114 Stat. 2576) provides that:

"[T]he Secretary shall credit toward the non-Federal share of the cost of the project [Port of New York and New Jersey, New York and New Jersey] or the cost of design and construction work carried out by the non-Federal interest before the date of execution of a cooperation agreement for the project if the Secretary determines that the work is integral to the project."

104. In addition, §204(a-d) of WRDA 1986 (Public Law 99-662, 100 Stat. 4082) provides guidance regarding cost sharing and authority for construction of projects by non-Federal interests:

(a) Authority. —In addition to projects undertaken pursuant to sections 201 and 202 of this title, any non-Federal interest is authorized to undertake navigational improvements in harbors or inland harbors of the United States, subject to obtaining any permits required pursuant to Federal and State laws in advance of the actual construction of such improvements.

(b) Studies and Engineering. – When requested by an appropriate non-Federal interest the Secretary is authorized to undertake all necessary studies and engineering for any construction to be undertaken under the terms of subsection (a) of this section, and provide technical assistance in obtaining all necessary permits, if the non-Federal interest contracts with the Secretary to furnish the United States funds for such studies and engineering during the period that they are conducted.

(c) Completion of Studies. –The Secretary is authorized to complete and transmit to the appropriate non-Federal interest an study for improvements to harbors or inland harbors of the United States which were initiated prior to the date of enactment of this Act, or, upon the request of such non-Federal interest, to terminate such study and transmit such partially completed study to the non-Federal interest. Studies under this subsection shall be completed without regard to the requirements of subsection (b) of this section.

(d) Authority to Carry Out Improvement. —Any non-Federal interest which has requested and received from the Secretary pursuant to subsection (b) or (c) of this section, the completed study and engineering for an improvement to a harbor or an inland harbor, or separable element thereof, for the purpose of constructing such improvement and for which improvement a final environmental impact statement has been filed, shall

be authorized to carry out the terms of the plan for such improvement. Any plan of improvement proposed to be implemented in accordance with this subsection shall be deemed to satisfy the requirements for obtaining the appropriate permits required under the Secretary's authority and such permits shall be granted subject to the non-Federal interest's acceptance of the terms and conditions of such permits: Provided, That the Secretary determines that the applicable regulatory criteria and procedures have been satisfied. The Secretary shall monitor any project for which permits are granted under this subsection in order to ensure that such project is constructed (and, in those cases where such activities will not be the responsibility of the Secretary, operated and maintained) in accordance with the terms and conditions of such permits.

105. The navigation deepening work to be completed for MOTBY and the South Brooklyn Marine Terminals is integral to the 50-foot project. It is included within and part of the 50-foot consolidated project. Thus, under both §101 and §204, the Government would provide the non-Federal sponsor with credit(s) for navigation work completed prior to Government authorization in which there is a Federal interest and subsequent Government authorization.

106. The implementation of the HAMP includes the retrofitting of several vessels operated by the City of New York in the conduct of its Staten Island Ferry and the repowering of tugboats. Due to the uniqueness of this program, the District and the PANYNJ agreed that execution of the HAMP would be enhanced by allowing the PANYNJ to implemented the retrofits and repowering because they have greater flexibility to sign agreements with other agencies and private entities.

VII COST APPORTIONMENT

107. The proposed apportionment of first costs between the Federal Government and the non-Federal partners for the Recommended Plan is in accordance with §101 of WRDA '86, §210 of WRDA '96 and §101(a)(2) of WRDA '00.

108. The Federal share of the project's initial cost is $594,107,000. This represents 43% of the total. The Federal government will design the project, prepare detailed plans and specifications, and construct the project, exclusive of those items specifically required of the non-Federal interests or performed in accordance with §101(a)(2)(B) of WRDA '00. This credit is discussed in the previous section, is applied to the non-Federal sponsor, and is estimated at $208,004,000.

109. The non-Federal share of the estimated initial cost of the project is $790,403,000. The non-Federal share consists of a number of components including Lands, easements, relocations, rights-of-way, disposal areas and water and mineral rights, which are necessary to implement the project (LERR), costs associated with utilities relocation; and a 10% cash contribution of $128,380,000. The non-Federal share represents 54% of the total GNF first costs and 57% of the final initial cost requirement. A breakdown of the Federal and non-Federal cost share is shown in Table 6, below.

110. The Recommended Plan in the *Feasibility Report* was identified as the National Economic Development (NED) Plan. It consisted of the following channel deepening, environmental compliance, and project implementation components:

- Construction of a 53 ft Mean Low Water (MLW) navigation channel to deepen the entire length of the existing Ambrose Channel;
- Construction of a 50 ft MLW (52 ft in rock or otherwise hard material) navigation channel to deepen portions of the existing Anchorage Channel, from the Narrows to 1000 feet past its juncture with the Port Jersey Channel;
- Construction of a 50 ft MLW (52 ft in rock or otherwise hard material) navigation channel to deepen the existing Port Jersey Channel, from its juncture with Anchorage Channel to the Global Terminal and Military Ocean Terminal-Bayonne (MOTBY) facilities;[32]
- Construction of a 50 ft MLW (52 ft in rock or otherwise hard material) navigation channel to deepen the existing Kill Van Kull, from its juncture with Anchorage Channel to the Arthur Kill;
- Construction of a 50 ft MLW (52 feet in rock or otherwise hard material) navigation channel to deepen the existing Newark Bay Channel, from its

[32] This recommendation is subject to a condition precedent imposed by the Office of Management and Budget (OMB) directing that construction of the Federal component of the Port Jersey Channel be predicated upon there being operational container-handling facilities of sufficient capacity to realize sufficient benefits to justify the deepening of the Port Jersey Channel to 50 ft as formulated within the Recommend Plan. The letter is included with this LRR as pertinent correspondence.

juncture with the Kill Van Kull to the juncture with the Elizabeth Channel, and including deepening the existing Elizabeth, South Elizabeth, and Elizabeth Pierhead Channels to 50 ft MLW (52 ft in rock or otherwise hard material);

- Construction of a 50 ft MLW (52 ft in rock or otherwise hard material) navigation channel to deepen the existing Arthur Kill, from its juncture with the Kill Van Kull and Newark Bay to the southernmost berth at the Howland Hook marine terminal; and
- Construction of a 50 ft MLW (52 ft in rock or otherwise hard material) navigation channel to deepen the existing Bay Ridge Channel, from its juncture with Anchorage Channel to the South Brooklyn Marine Terminal, subject to commitment to rehabilitate the South Brooklyn Marine Terminal and transportation infrastructure needed to realize project benefits.
- Implementation of mitigation measures for unavoidable impacts, which may include the restoration of 11 acres of intertidal wetlands, and construction of 7.6 acres of littoral habitat.

111. The Project Cooperation Agreement requires that the project cost be shown. Further, these costs are to be the cost of the General Navigation Features and should be inflated through the period of construction and any subsequent periods of construction and do not include the costs of local service facilities or LERR's. The fully funded Federal project cost is $1,645,297,600 of which the Federal share is $756,837,000 (46%) and the non-Federal share is $888,461,000 (54%). The cost sharing is based on the percentages calculated in the following table.

Table 6 – Cost Apportionment

FEDERAL/NON-FEDERAL COST APPORTINMENT					
($1,000s, September 2003 Price Level)					
	Total Project	Federal		Non-Federal	
Item	Cost ($)	Cost ($)		Cost ($)	
General Navigation Features (GNF):					
GNF to –45 feet	198,557	148,917	75%	49,639	25%
GNF cost between –45 feet & -50 feet	1,085,243	542,622	50%	542,622	50%
Total GNF	1,283,800	691,539	54%	592,261	46%
Additional Funding Requirement					
10% of GNF		-128,380		128,380	
Adjustment for LERR Credit		30,808		-30,808	
Subtotal of Cost Shared Items	1,283,800	593,967	46%	689,833	54%
LERR					
Newark Bay (50% Deep Draft Utl. Relo.) (1)	1,944			1,944	100%
Upper Bay (50% Deep Draft Utl. Relo.) (1)	18,606			18,606	100%
Lower Bay (50% Deep Draft Utl. Relo.) (1)	1,362			1,362	100%
Lands & Damages	8,896			8,896	100%
Total LERR	30,808			30,808	100%
Local Service Facilities					
Dredging of Berthing Areas to –50 feet	40,630			40,630	100%
Total 100% Sponsor Responsibility	40,630			40,630	100%
Federal Aids to Navigation	140	140	100%		
Subtotal of Federal & Sponsor Items	1,355,378	594,107	44%	761,271	56%
Utility Relocations					
Newark Bay (50% Deep Draft Utl. Relo.)(2)	1,944			1,944	100%
Upper Bay (50% Deep Draft Utl. Relo.) (2)	18,606			18,606	100%
Lower Bay (50% Deep Draft Utl. Relo.) (2)	1,362			1,362	100%
	21,912			21,912	100%
Facility Removals (3)					
Commerce Street Pier KVK	216			216	100%
Allied Signal S Elizabeth	6,755			6,755	100%
P&G Piers Arthur Kill	249			249	100%
	7,220			7,220	100%
Final Initial Cost Requirements	**1,384,510**	**594,107**	43%	**790,403**	57%

(1) Sponsor receives 50% credit for deep-draft utility relocations.

(2) Utility Owner pays 50% for deep-draft utility relocations.

(3) Facility owner pays 100%

VIII CONCLUSIONS

112. This LRR concludes:

- This Limited Reevaluation Report, which responds to congressional direction to look at cost-saving opportunities, shows that implementing Predecessor Projects with the Recommended Plan will save approximately $100,800,000.

- The Recommended Plan remains economically justified and environmentally acceptable. In fact, the economic justification for the project is stronger than described in the *Chief's Report*.

- Pathway 1 to the sea is economically justified as a first added element.

- Pathway 4, is marginally economically justified in its existing condition as a first added element and is justified as a first added element to Pathway 1.

- There is a plan that provides compliance with the General Conformity Rule of the CAA in each month of the construction schedule. This plan minimizes the cost of CAA compliance.

- Consolidated implementation of the Recommended Plan with the KVK/NB-45 Predecessor Project in Contract Areas 4b and 5 will save the Corps $12,400,000 (see Table 4), reduce environmental impacts, and is recommended.

- Consolidated implementation of the Recommended Plan with the AK-41/40 Predecessor Project is not desirable in this area as it delays the realization of the benefits of the Predecessor Projects for approximately 67 months without advancing the benefit of the availability of the 50-foot channel or providing sufficient cost savings to justify this delay. In light of this finding, consolidated implementation of Arthur Kill Channel is not economically justified.

- Dredging Port Jersey to 41 feet on the 50-foot alignment is safer, less costly, and environmentally preferable.

- Once the 50-foot PCA is signed, the non-Federal sponsor (PANYNJ) should be credited for what would have been the Federal share against their contribution to the total project cost.

IX RECOMMENDATION

113. I recommend that the recommended Harbor Deepening Project consolidated implementation plan, which consists of the following features, be executed:

- Construction of the uncompleted portions of the Predecessor Projects utilizing their authorizing documents and Project Cooperation Agreements, excepting:
  - KVK/NB-45 Contract Area 4b, which shall be combined within a larger 50-foot contract;
  - KVK/NB-45 Contract Area 5, which shall be combined within a larger 50-foot contract; and
  - PJ-41, which shall be cost-shared to 41 feet on the 50-foot alignment as the 50-foot channel is constructed via a Department of the Army permit.

- Use of larger contract areas to provide flexibility for the dredging industry with respect to environmental windows and equipment mobilization.

- The implementation of the Harbor Air Management Plan in order to bring the Harbor Deepening Project into compliance with the Clean Air Act.

- The implementation of the aquatic mitigation plan, as described in the *Environmental Assessment*.

114. Consolidated implementation of Predecessor Projects with the Recommended Plan will produce the same benefits to the Port of New York and New Jersey as identified in the *Chief's Report*, with a reduction of $100,800,000 in project cost and produce fewer and less severe environmental impacts, therefore, the District recommends consolidated implementation of the Harbor Deepening Project.

115. It is further recommended that the Secretary of the Army approve the crediting plan described herein (see Table 5). This plan provides credits to the non-Federal sponsor for in-kind construction and design services that it has performed in advance of the 50-foot Project Cooperation Agreement but which are integral to the overall project.

116. The recommendations contained herein reflect the information available at this time and current U.S. Army Corps of Engineers policies governing formulation of individual projects. They do not reflect program and budgeting priorities inherent in the formulation of a national Civil Works construction program or the perspective of higher review levels within the Executive Branch. Consequently, the recommendation may be modified at higher levels. The non-Federal Partners will also be afforded an opportunity to comment further.

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District Engineer